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COURSE OF STUDY IN ART IN THE HIGH SCHOOL, SCHOOL OF EDUCATION, THE UNIVERSITY OF CHICAGO

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The enrolment of the University Elementary School is limited to 375 pupils, that of the High School is limited to 400. Since so large a proportion of the High School pupils must therefore have received their training in other schools, and since the course in the High School is an elective open to pupils from all classes in the School, it is impossible at present to build absolutely upon the foundation of the elementary courses in planning the High School work.

GENERAL AIMS AND GUIDING PRINCIPLES OF ART INSTRUCTION IN THE HIGH SCHOOL

The art work in the High School differs from that of the elementary grades in two ways: first, it becomes a more adequate means of expression because the pupils have more skill and a wider range of interests; and secondly, on account of the increased maturity of the High School pupils, certain points of view which

were of secondary importance in the elementary grades now take on much greater significance.

It becomes possible to make more use of theories than was profitable in the elementary grades—for instance, in perspective drawing and in color and design. To the story-telling motive in illustrative drawing is added a greater interest in those details of appearance which have a special artistic significance, such as the textures and colors of surfaces, and the play of light and shade. In landscape-drawing the satisfaction in reproducing actual appearances for the sake of facts, or in composing ideal landscapes for the sake of the story, is not sufficient. A high degree of excellence in pictorial composition is demanded. These and other differences in interest on the part of high-school pupils as compared with elementary-school pupils are not always sharply defined. Nevertheless they are sufficiently evident to allow not only a study of different subject-matter, but new ways of dealing with subject-matter which is already familiar.

ART COURSES IN THE HIGH SCHOOL

The art work in the University High School is offered in three courses: (I) a general art course; (II) a course in drawing and design closely related to the work in shopwork; in this course alternate days are spent in the shop and in drawing; (III) a course called the "Survey of Art"—a course in the history and appreciation of art. These are all elective courses. No art work is required in the High School, although each pupil is required to elect one major from the group of Shop, Art, or Home Economics. The details of the three courses are as follows:

I. THE GENERAL ART COURSE

This is a laboratory course of one period daily. Two years of work are offered, each receiving one-half a credit for graduation. The first year's work is prerequisite to the advanced course except that, to keep within the prescribed number of courses on which the University allows greater credit for excellent work, pupils of ability may be permitted to carry both courses in the same year. The course includes: (*a*) drawing from objects—still-life, room interiors, plants, animals, the human figure, and landscape; (*b*) drawing

from memory; (*c*) decorative compositions: poster and book designs, designs for pottery, rugs, etc.

The work is planned to give a continual increase in ability to use different mediums, with an appreciation of the artistic possibilities of each, and an understanding of the aesthetic significance of lines, proportions, shapes, tones, and colors. It also aims to develop a constantly increasing aesthetic interest in the appearances of nature and an ability to select the most beautiful aspects of what is seen. The pupils are expected to exercise increasing discrimination in criticizing their own work, because of their widening acquaintance with excellent examples of art and with the principles of good design.

Since pupils from any year in the High School may elect the art work, there is little opportunity to relate it definitely to any one of the other courses. Each year, however, some time is devoted to the kind of study and representation of the actual structure of natural forms that is useful to the scientist as well as to the designer. A part of each year's work is the pictorial interpretation of selections from literature, the aim being to develop the power of visualizing from the verbal hint or description. By experience in drawing directly from objects, by training in visualizing and in memory drawing, and by the use of an art reference library, the pupils are expected to become able to meet readily the ordinary demands for illustration in connection with any other course.

The reference library in the art room has a classified collection of reproductions of drawings, photographs, etchings, paintings, designs, and studies in color. This material is available for the use of students in any department.

The High School pupils issue three publications. These are the most important natural outlets for the artistic efforts of the pupils. Each class works upon one or two problems in design for these. Thus far these designs have been for reproduction by means of zinc etchings.

Much of the work centers about certain fundamental principles of art and the application of these principles in different types of artistic expression. When a series of problems begins with a study of principles of design it is carried on into definite application

through a craft problem or through its application to a problem in illustration or representation. When the series of problems begins in a study of facts of appearance it is carried on into decorative arrangements and into illustrative drawing. Study of the theory of color leads immediately into expression of color harmonies and more appreciative observation of the colors of nature.

The work of the second year is planned upon a basis of the knowledge and experience gained in the first year. More difficult problems are attempted. Pen-and-ink sketching and figure drawing receive special attention. The principles emphasized in the first year are reviewed in connection with the new problems. The pupils are expected to be more skilful and discriminating in their technical methods. There is more critical analysis of the means of expression than can profitably be undertaken during the first year. Group problems in which each pupil has a part serve to emphasize the subordination of each part to the whole and make possible some larger projects.

Materials Used by Each Pupil

First Year

Drawing board
Thumbtacks
Paper—white 9″×12″
assorted colors 9″×12″
charcoal paper
Ink—liquid india
Pencils—H, Hb, 2B
Watercolors—8 colors, red, vermilion, yellow, burnt sienna, prussian blue, ultramarine, black, white
Charcoal
Colored crayons
Envelope to hold work
Paste
Scissors

Second Year

In addition to the above:
Ink paper
Pens—medium and fine
Rice paper
Special mediums are introduced when required for particular problems.

Outline of Subject-Matter in the General Art Course

First Year

Principles Emphasized	Topics
Harmony of shapes, subordination Unity	Envelope design Page for Correlator Heading for Correlator Nature drawing
Lines of growth Foreshortening Rhythm *a*) Repetition *b*) Size *c*) Direction *d*) Curvature *e*) Shapes (including *a*, *b*, *c*, *d*)	Borders Surface patterns Designs in circles Designs for pottery Nature—Leaves Flowers Birds
Subordination Balance	Landscape composition Decorative compositions Selections from photographs Window sketching
Perspective	Still-life—*a*) From the objects *b*) Compositions
Color Variations Typical schemes Method of producing harmony Method of producing fine qualities Color rhythm	Color charts Hues Values Intensities Typical schemes Qualities Decorative compositions Designs Color schemes in nature Drawings in water colors from nature
Composition Unity Subordination Balance, etc.	Drawing for illustration of literary selections Out-of-door sketching

Second Year

Principles Emphasized	Topics
Composition Methods of emphasis Unity	Out-of-door sketching Decorative composition
Lettering—Spacing Form and style	Book plates Pages of lettering Page designs for Annual
Perspective Parallel Angular	Roads, rivers, rooms Boxes, furniture, rooms, buildings
Action and structure of the human figure	Pose drawing
Color harmony	Book illustration Room interiors Posters Nature drawing

First Year

Technique Emphasized	References
Lettering	Book covers Page designs
Pen and ink	Posters Ancient and modern lettering and illuminating
Pencil outline Detail drawing	Scientific drawings Designs *a*) Greek fret, Greek colonnade, Doric frieze
Direct brushwork Hand modeling—clay Painting with underglaze color	*b*) Indian designs, Giotto's Tower *c*) and *d*) Anthemion, Palmette, Lotus *e*) Parthenon Frieze Santa Barbara Madonna of the Chair Shaw Memorial, etc. Greek vases
Charcoal Chalk and charcoal on gray paper	Pictures by Millet, Corot, Inness, and others
Pencil outline Flat tones of main values Flat washes of color	Pictures in magazines illustrating the use of perspective principles in all drawing Pictures Textiles
Use of water color	Prints Pottery Costumes, etc.
Charcoal Water color	Pictures

Second Year

Technique Emphasized	References
Pencil Crayon Pen and ink	With pen and ink—Hall Pen drawing—Maginnis Book and magazine illustrations
Work for reproduction Zinc etching	
Charcoal Pencil	Pictures Photographs Illustrations of modern engineering
Pencil Chalk and charcoal Colored crayon Water color	Construction of the human figure—Vanderpool Pictures—drawings Pictures Textiles, etc.

II. THE COURSE IN FREEHAND DRAWING AND DESIGN IN CONNECTION WITH SHOPWORK

In this course the shopwork and the drawing are planned each with definite relation to the possibilities and needs of the other. The two constitute a laboratory course of two periods daily, alternate days being spent in the woodshop and in drawing. The freehand work is also intended as a preparation for courses in mechanical drawing, although it is not demanded as a prerequisite.

Specific Aims and Guiding Principles

1. Drawing as a means of describing construction.
   a) The development of ability to sketch in outline any simple constructed form, from the object, from memory, from imagination, or from the working drawing.
   b) The development of ability to draw readily and understandingly more elaborate objects such as buildings, interiors, the machinery in the school shops.
   This involves a knowledge of constructive forms, an ability to represent three dimensions in terms of two, and a working knowledge of simple perspective principles.
2. Development of good taste.
   a) Knowledge of the fundamental laws of all good structural design and a habit of considering whether each design is fitted to serve the uses of the object, whether it is suitable to the material of which the object is to be made, and whether it is adapted to the tools which are to be used and to the necessities of good construction.
   b) Continually increasing sensitiveness to fine proportions, graceful lines, and pleasing contours.
   c) Appreciation of the masterpieces of fine craftsmanship in various lines.

Materials and Equipment for Each Pupil

Springfield drawing kit
Foot rule, with extended ends, marked to $\frac{1}{16}''$
White drawing-paper $9'' \times 12''$
Tracing-paper
Pencils HB, H, 3H
Liquid india ink
Brush
Writing pen
Eraser
Thumbtacks
Sand paper
Envelope to hold finished work
Some architect's cloth, blue-print paper, and large sheets of paper for special problems

Subject-Matter

The subject-matter of this course is, in brief, as follows. A more detailed presentation will be found in the syllabus of the manual-training courses.

Design	Perspective Drawing
Designs for objects to be constructed in the shop by turning *a*) Between centers *b*) Face plate *c*) Combinations	Cylinders—Foreshortened circles Forms showing beautiful curves Relation of working drawing to the perspective of cylindric and conical forms. Level of the eye Relation of axes of cylindric or conic forms to the long diameter of the ellipses Turned forms, wheels, machinery
Designs for rectangular objects Studies of proportion Designs for stools, tables, etc., combining turned and rectangular forms	Foreshortening of rectangular surfaces Convergence of receding parallels The vanishing-point. Level of the eye Simple measurements of relative sizes of objects in drawings Parallel perspective—street room objects Angular perspective
Designs for personal use—book plates, envelopes, lettering, etc.	Foreshortening three dimensions Two or more vanishing-points Drawing from large objects, corners of the room, buildings, etc. Relation of perspective to working drawing. Sketches of objects from the working drawing. Simple light and shade
Designs for architectural details such as gates, doorways, or simple porches. Plan and elevation	Perspectives from plan and elevation of architectural details

Approximately fifty plates are required for the year's work. These are usually finished in pencil. Some are inked with the brush and some with the writing-pen. The T-square and triangles

are used for margin lines, for center and dimension line, and for trueing up designs. The rule is used for measurements, for drawing right lines in designs, and in drawing diagrams for demonstration of perspective of rectangular objects.

Methods

Each design is studied in reference to the general principles of good structural design. The intended use of the object must be considered in determining the limitations of size, form, and construction. Since anyone must have some experience with a tool and with a material in order to design intelligently for that tool and that material, the class gains some skill in the preparatory exercises of the shop before attempting original designs. In the meantime, by drawing from objects of fine proportions, and, whenever practicable, from natural forms distinctly suggestive of possibilities for the design, the pupils are preparing to attack the problem of making designs for the objects which each one will construct in the shop.

The illustrative drawing is planned to assist the pupils in imaging the completed object after seeing the flat design. This phase of the work is fitted into the course in designing, because the designs are made whenever the most advanced pupils will need them in the shop.

In connection with the discussion of general principles of beauty in constructed objects some designs are made for objects which cannot be completed in the shop on account of the lack of time. Some of these designs are used later in advanced shop courses.

The usual method in developing a design is:

1. *Preparation*—
   - *a.* Clear definition of the necessary limits of the problem
   - *b.* Possibilities of variations within these limits to obtain greater beauty
   - *c.* Refinement of proportions and lines
   - *d.* Possibilities of decorative treatment suggested by the construction

2. *Experiment*—
   Each pupil makes from two to six sketches, varying proportions, contours, and decorative treatment
3. *Criticism*—
   Sometimes individual, but whenever practicable, by the class, selecting the most pleasing features and suggesting improvements
4. *Completion*—
   After selection of each pupil's best designs, any corrections or improvements are made and the result traced and dimensioned for the final plate and for the shop
5. *Perspective*—
   In designs for objects in which the perspective appearance enters largely into the effect, perspective drawings are made from the working drawings

Throughout the study of design desirable features are emphasized, illustrated by sketches, by designs, by photographs, and by objects.

The usual method of attacking problems in the illustrative drawing is:

1. Free sketches from memory or from imagination of objects involving a typical problem.
2. Discussion of facts of perspective already known and shown by these sketches. The organization of these facts, with the statement and exposition of such additional facts as may be necessary to their clear comprehension.
3. Drawing from objects selected and placed to illustrate the principles discussed, thus making the knowledge a working tool.
4. Generalization of the principles and application to drawing from imagination and from working drawings.
5. Drawing from more complex objects illustrating the same principles.

Throughout this drawing the constant test is: "Does it look right?" Emphasis is placed upon the fact that a tracing upon a plane parallel to the observer will give a correct drawing of the object if one observes the ordinary limitations of vision. Each law

of perspective is confirmed by reference to what the pupils actually see. Many different tests of appearances are used, such as finders, angles, tracing upon a real or imaginary plane, comparison with verticals, etc.

As a result of this course the pupils are expected to develop a habit of thinking of design in relation to the definite conditions necessary for the most complete satisfaction of the function of the object and a standard of excellence in proportions, enrichments, and workmanship, which will lead to discriminating choices when they are purchasing constructed objects. They should be able to sketch with reasonable accuracy any constructed form.

III. THE SURVEY OF ART

This is a course in the general history and appreciation of art. It includes a study of the development of architecture, sculpture, painting, and the allied arts from prehistoric times to the present. While it is impossible in such a general survey to make an exhaustive study of all lines, those general features of the arts of different times and peoples which most intimately express the life and ideals of the people are dwelt upon. The pupils become acquainted with many of the greatest masterpieces in a way which gives new meanings to history, literature, and current events. Modern art gains new significance when viewed in the light of a knowledge of past art, and modern life is interpreted from another point of view when the arts of the present are recognized as being its inevitable expression.

The "Survey of Art" is an academic course reciting one period daily. It is an elective and the majority of the members of the class are Juniors or Seniors. The study is assigned by means of historical and critical outlines, and through library references. Some of the most frequently used books at present in the library are: Reinach, *Apollo;* DeForrest and Caffin, *Short History of Art;* Caffin, *How to Study Pictures;* Tarbell, *A History of Greek Art;* Batchelder, *Principles of Design;* Owen Jones, *Grammar of Ornament;* Myers, *Handbook of Ornament;* Emory, *How to Enjoy Pictures;* Bailey, *Twelve Great Paintings.* Many others are used in part, or for special reference.

Each pupil keeps a notebook in which he mounts reproductions of about two hundred works of art, and tracings of characteristic and beautiful decorative motives or illustrations of principles. In these books are kept also historical outlines, descriptions of some of the masterpieces, records of visits to the museums, and other data of interest.

The endeavor is constantly to study the work of art rather than merely what is said about it, and the work of an artist rather than his biography. Descriptions which give the vision of another and criticisms which present the judgment of another are used as a basis of comparison and to stimulate the pupil's own vision and judgment. Visits to the museums, and frequent lectures illustrated with the lantern or by demonstrations are important parts of the work. At all times reproductions of the works under special consideration are on exhibition in the art room. The bulletin board in the study-room has been freely loaned to us for this purpose by the librarian.

While for the sake of greater coherence in the course the works of art are grouped for study according to country, type, or period, the pupils are led to realize the individual qualities of masterpieces and, as far as may be, to avoid making general judgments on insufficient experience.

The following outlines suggest the method used in critical study of masterpieces. These outlines are put into the hands of the pupils as a guide when they are to study any given work.

An Outline for the Study of an Object Whose Primary Function is Utilitarian

Consider:

1. A. Purpose, or intended use
   B. The material
   C. The tools used and the form of construction
2. A. Fitness of the object to its purpose
   B. Fitness of its form to its material
   C. Fitness of its decoration to material and function
   D. Influence of the tool and construction upon the decoration
3. A. The refinement of the proportions
   B. Beauty of lines and shapes

4. A. The enrichments of the object. Do they enhance:
   a) Form
   b) Function
   c) Material
   d) Structure
   B. The decorative motives
   C. The imagination of the designer
5. The unity of the whole:
   a) Order in variety
   b) Consistency in treatment
   c) Harmony of colors
6. Quality of workmanship
7. Your own response: Do you derive pleasure from this object? In what way? What do you imagine might be the feelings of the one who uses such an object? of the one who made it?

An Outline for the Study of a Piece of Sculpture

Remember that a picture of a piece of sculpture cannot give the same impression as the work itself. Even a cast loses somewhat, and a cast of a small copy frequently gives a very different effect from the original.

To see a piece of sculpture, one must look at it from all points of view. The lighting and the surroundings also change the effect.

1. Subject
2. Character:
   A. Relief
   B. Round
3. Purpose:
   A. Decoration of architecture—exterior or interior—landscape
   B. Commemoration
   C. Expression of form
   D. Expression of thought or feeling through form
4. The Sculpture's language:
   A. Modeling:
      Clay
      Wax
   B. Material:
      Stone
      Wood
      Marble
      Bronze
      Ivory
   C. Composition:
      Lines from different points of view
      Suggestion of solidity

Light and shade
Suggestion of textures
Treatment of details

5. Your own response: What does this piece of sculpture mean to you? What is your judgment of the artistic quality of the lines? the shapes? the play of light and dark? the idea expressed?

An Outline for the Study of a Building

Remember that a picture can give only a partial idea of the building. Remember, also, that problems of construction, of strength of materials, of lighting, heating, etc., must be considered by the architect. He must be able to solve these, and to satisfy the requirements of the intended use of the building as well as to consider and choose beautiful proportions and appropriate forms of decoration.

Consider:

1. Location and climate
2. Purpose:
   Temples: Individual worship; general gatherings
   Theaters
   Residences
   Public buildings
   Commercial buildings
3. Material:
   Why?
   Manner of covering, openings or spaces:
   Lintel: plain; corbelled
   Arch: Round; pointed; horseshoe
4. Plans, elevations, and perspective views
5. What do you think of the proportions of the building? of the decorations?
6. Does this building arouse any emotion in you? If so, what?

An Outline for the Study of a Picture

Study, not to approve nor to disparage; but to appreciate the expression of genius and enrich your own perceptions and sources of aesthetic pleasure.

1. Look at the picture. Remember that no reproduction can give the full effect of the original
2. Subject—the dominant interest:
   A. People
      a) Portraits
      b) Imaginary
      c) Combinations
   B. Animals
   C. Still-life

D. Landscape
   a) Country
   b) City
   c) Marine

3. Background or setting: The subordinate interests
   A. How does it influence the picture?
   B. Why was this background chosen?
   C. The time of day, of the year; lighting; atmosphere.

4. The artist's purpose:
   A. Decoration
   B. Instruction
   C. Record
      a) Facts
      b) Aesthetic impressions
         (1) Illustration (story?) religious, historical, allegorical, mythological, literary, incidental
         (2) Portraits (personality shown how?)
         (3) Appearances (why appealing?)
            (*a*) Actual
            (*b*) Imaginary
            (*c*) Any subject (cf. 2)

5. The Artist's language. How has the Artist accomplished his purpose?
   A. Composition—How is the central theme supported? { Line—Character / Mass—Arrangement / Color—Quality and relations } { Balance / Harmony / Rhythm }
   B. Technique—Drawing, Values, Color, Textures, Brushwork. Note different requirements of etching, painting, drawing, mural decorations

6. Your own response:
   A. Intellectual { What does the picture tell you? / Depending largely upon your supplementary knowledge / Partly upon your convictions and beliefs }
   B. Aesthetic { What feelings do you get from the picture? / Depending partly upon your sensitiveness to relations of lines, shapes, tones, partly upon your ability to yield to the influence of the picture }
   C. Does the picture stimulate your feeling of reverence, awe, joy, calmness, enthusiasm, love (for what?) hate (of what?)?
   D. What do you think would be the effect of seeing this picture frequently?

SUBJECT-MATTER OF COURSE IN SURVEY OF ART

Period	Architecture	Sculpture	Painting	Allied Arts
Prehistoric and aboriginal	Dolmens Cyclopean walls Cliff dwellers' homes	Totem poles Charms	Animals in cave dwellings Pictographs	Textiles Tools Basketry and pottery
Egyptian	Lintel—Stone Temples Pyramids	Sphinx Rock-hewn temples and tombs Colossal stone figures Figures from tombs Relief decorations Hieroglyphics	Decorative On walls Mummy cases Columns Sculpture	Pottery Jewelry Textiles
Chaldean Assyrian, and Babylonian	The vault—Brick and tile	Reliefs Gems and seals Figures		
Greek	Lintel—Marble and stone Temples { Doric, Ionic, Corinthian }	Decoration of architecture Cult images Votive offerings { Gods, Goddesses, Athletes } Grave stela Portraits	Enrichment of architecture Mural painting Portraits	Ceramics Metal work Coins and seals
Roman	Round arch Vault and dome—Brick, stone, marble Temples Amphitheaters Palaces and baths Triumphal arches Tombs Forts, walls, aqueducts, etc.	Decorative and commemorative Portraits Greek workmanship Reliefs	Mural decorations (Pompeii) (House of Livia)	Mosaics Bronze utensils Furniture
Early Christian (West)	Arch—Lintel—Wooden roofs			
Early Christian (East)	Arch and dome		Decorations—Allegories	Mosaics—Decoration
(Byzantine)	Churches			
Romanesque	Arch—Few windows Churches	Decoration of architecture		Mosaics Missals

Gothic	Pointed arch—Windows Buttress and flying buttress Churches Schools Dwellings	Decoration of architecture Stone Wood Ivory	Altar pieces	Furniture Missals Wrought iron
Mohammedan	Bulbdome Horseshoe arch Mosques Palaces Tombs		Arabesques	Mosaics Lettering and illuminating Textiles
Indian	Temples Pagodas	Architectural decoration Figures—Idols		Jewelry Textiles—Block printing
Japanese	Pagodas	Wood, ivory, bronze, porcelain	Prints	Textiles and embroidery Pottery and porcelain Metal work Landscape gardening
Persian				Rugs and textiles
Renaissance	Combinations and adaptations of earlier styles Palaces Churches	Reawakened interest in ancient sculpture	Decorat on of churches Italy Flanders Germany Linear perspective, anatomy, composition, color	Silver and goldsmith work Furniture
Seventeenth Century		France	Spain Flanders Holland Italy Aerial perspective, light and shade	Furniture Tapestries
Eighteenth Century	English American Colonial	France	France America England Spain	Pioneer Crafts in America
Nineteenth Century Twentieth Century	Steel construction Cement Skyscrapers	France America	France Russia England Spain America Norway Germany Painting—Sunlight Holland impressions	Renaissance of crafts Landscape gardening

GENERAL SCIENCE IN IOWA HIGH SCHOOLS

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Courses in general science have been introduced in the last five years in about one hundred accredited Iowa high schools. In over 75 per cent of these schools the subject was introduced for the first time during the current year (1915–16). The status of the course is, therefore, as yet undetermined.

This study covers the status of general science in 247 of the 345 high schools accredited by the higher educational institutions of Iowa.

SOURCE OF DATA

To secure the necessary data a letter and questionnaire were sent early in January, 1916, to the principals of the 345 accredited Iowa high schools. The responses were prompt, and, for the most part, complete. They evidence the wide-spread interest that principals and teachers have in this subject. Of the 345 schools to which the request for information was sent, 247, or 71 per cent, replied. For the convenience of the reader the answers to each question are summarized and discussed in the order in which the questions occurred in the questionnaire.

1. *Is general science taught?*—The replies show that general science is not taught as yet in the majority of the accredited high schools of this state. Of the total number of schools, 100, or 28 per cent, are now offering the subject; about 15 per cent of the schools not offering the subject are thinking of introducing it "next year." In 90 of the 100 schools the course is one semester in length.

2. *When was it introduced?*—For the most part the subject has been introduced within the last year. Only two schools have offered the subject for more than three years. The returns from the 100 schools offering the subject are as follows: 1 school offered it for the first time in 1910–11; 1 school offered it for the first time

in 1911–12; 2 in 1912–13; 6 in 1913–14; 13 in 1914–15, and 77 in 1915–16.

3. *What subjects, if any, were displaced by general science?*—Apparently high-school teachers and principals do not know what to do with regard to science in the high school. A number of them are questioning the value of some of the more traditional sciences, and are willing to sacrifice a half or a whole year of such subjects. They feel that a course in general science is bound to come, and that they had better begin experimenting with it in order to keep abreast with the times. They have devised a variety of ways of relieving the congestion caused by the course, as shown in the following summary. Certain science subjects, such as physical geography, botany, zoölogy, and physiology, are most often displaced. On the other hand, "word analysis" has been displaced in 1 school, mediaeval and modern history in 1, civics in 1, and Latin in 1.

Physical geography displaced in	47 schools
Physical geography and botany displaced in	8 schools
Physical geography and zoölogy displaced in	2 schools
Physical geography and botany and zoölogy displaced in	3 schools
Physical geography and physiology displaced in	3 schools
Mediaeval and modern history displaced in	4 schools
Commercial geography displaced in	2 schools

The following subjects were displaced once each: geology, in 1 school; word analysis, in 1 school; botany and physiology, in 1 school; biology, in 1 school. Latin was reduced to 3 years in 1 school; civics was reduced to 1 half-year in 1 school, and manual training, domestic science, and agriculture were displaced in 1 school. In 15 schools only was there no displacement of other subjects.

These figures are not in agreement with those given by Mr. A. M. Taylor in a recent article. Mr. Taylor[1] states that, "In a majority of the cases there has been no recognized displacement of other subjects." The figures here reported would indicate that *in a majority of cases there has been a marked displacement of other*

[1] Taylor, "General Science Situation in Iowa and California," *School Review*, January, 1916.

subjects. This displacement has affected physical geography, botany, and zoölogy rather seriously.

The statements made by the principals of the high schools introducing general science show how serious this displacement is. The following are typical:

1. Our present course in general science is for one semester only. Next year we intend to make it a full-year course and *eliminate botany entirely as a special subject*.

2. We had a full year of civics. We reduced it to one-half in order to introduce general science.

3. We give three years of Latin now instead of four. [Science has taken the place of the fourth year.]

4. We reduced botany to one semester.

5. We eliminated the one-semester course in physiology.

6. No displacement; general science elective. Offered especially to students in the commerical course.

7. We omit physical geography. [One semester of physical geography was eliminated in 42 schools, while in 19 schools the year course was eliminated, general science being substituted.]

8. Botany and zoölogy were removed from the first to the third year of the high-school course.

9. Ancient history was put into the Sophomore year.

4. *What textbook is used?*—The present popularity of textbooks in general science is shown in the following figures which state the number of schools using each. In all, 96 schools reported.

Caldwell and Eikenberry, *General Science*	31
Snyder, *First Year Science*	30
Clark, *General Science*	13
Pease, *First-Year General Science*	9
Hessler, *First Year of Science*	12
Rowell, *Introduction to General Science*	1
Total	96

5. *Comparison of textbooks in general science.*—In order to give a partial answer to the many questions which arise concerning the merits of textbooks in general science, a rough comparison of the six textbooks is made. As may be seen, the method of comparison is very simple. Down the left-hand side of Table I are the names of special sciences which a course in general science might possibly be expected to cover. These sciences are: physics, chemistry, biology (botany and zoölogy and physiology), agriculture (not

included under biology), commercial geography. This comparison was made by Mr. Andrew M. McMahon, a senior student in physics. It is very difficult to distribute some of the material that appears in these textbooks. Mr. McMahon has used his best judgment. At least it is possible to gain from such a comparison a general idea of the textbooks. In certain instances it may be found that these figures are not exact. It is very difficult to be exact in such a comparison. The writer feels that the comparison is fair, and that the facts are sufficiently exact for all ordinary purposes.

TABLE I

SHOWING THE NUMBER OF PAGES IN SIX GENERAL-SCIENCE TEXTBOOKS GIVEN TO THE DIFFERENT SPECIAL SCIENCES

	Hessler	Clark	Snyder	Caldwell	Pease	Rowell
Physics	150	249	67	76	74	108
Chemistry	88	56	10	12	22	33
Biology (Zoölogy, Botany, Physiology)	178	26	82	131	48	63
Agriculture	10	0	15	15	2	30
Geology	14	0	198	19	83	21
Meteorology	26	0	41	39	12	18
Astronomy	0	0	30	3	31	19
Commercial geography	0	0	0	8	0	0
Illustrations (total number)	311	241	307	137	161	0
Questions	0	0	some	0	some	0
Experiments	200	100	130	50	80	90

Table I should be read as follows: 150 of the pages in Hessler's book on general science are devoted to a discussion of physics, while Clark spends 249 pages on this subject, Synder only 67, Caldwell 76, Pease 74, and Rowell 108.

A careful study of these figures shows that 3 of the 6 textbooks stress physics, 2 biology, and 1 physical geography. It is apparent that writers of general-science textbooks do not agree as to what should constitute a course in the subject. Where the doctors disagree, what can the laymen do?

6. *The amount and character of laboratory work.*—The current practice is shown fully by the following summary of 99 replies:

5 schools have laboratory work amounting to 2 double (forty-minute) periods per week.

21 schools have laboratory work amounting to 2 forty-minute periods per week.

21 schools have laboratory work amounting to 1 period per week.
4 schools devote from 80 to 160 minutes per week to laboratory work.
23 schools report that they have "some," "little," "occasional," laboratory work "as needed." All such work is "class demonstration" to serve as "illustration"; that is, the teachers "show things as they appear in the text."
25 schools either fail to answer or say frankly that they do not have laboratory work in connection with general science.

There appears to be little attempt to teach science by projects or problems. The subject is treated about the same as history or economics. Assignment is made to the text, the assignment is learned by the pupils, and recited next day. The teacher demonstrates ten to twenty-five experiments during the course. A special laboratory for general science cannot be found in Iowa. The present laboratories are inadequately equipped in a majority of the schools.

7. *Amount and character of field work.*—In at least 50 of the 100 schools no field work is required or given. In 20 additional schools a negligible amount of field work is offered. In the remaining schools some field work is given, the amount varying from "one trip in the spring" to "at least two trips each month." One school says: "We have field work whenever needed to make teaching effective." Another says: "We have just enough to illustrate plant life and growth, also to see geological features, erosions, etc." Two or three schools postpone all field work to the spring of the year. One thing stands out prominently in all the replies, namely, field work is not as yet highly regarded in connection with general science.

8. *In what year is the course offered?*—Replies to this question show very clearly that general science at present is a ninth-grade subject in Iowa high schools; in but four schools has any attempt been made to teach the subject in the eighth grade. In but one school is the subject taught in the tenth year. Does not an introductory course of this character belong in the seventh or eighth grades? Perhaps, as Professor Woodhull states, the entire science course of the elementary and high schools should be reorganized with the principle of general science as the controlling consideration.

9. *Are pupils from other years allowed to enter the class?*—The replies indicate that the course is primarily intended for the particu-

lar grade; in about 20 schools no other pupils are permitted; in the remaining schools other pupils may take the course, but they do not usually do so.

10. *Who teaches general science?*—In 56 high schools the course is taught by a man, and in 39 schools by a woman. In a few schools in which more than one division of the course is maintained, certain divisions are taught by a man and others by a woman. Forty-three of the 92 replying are teaching science only. The remaining teachers have combinations, according to the necessities of the high-school program. Such combinations as general science, history and economics, or general science, pedagogy, history, reading, and civics, are hard to justify. Can general or special science be properly presented by teachers so burdened? The certificate to teach in Iowa high schools is a blanket certificate. That is, it permits a teacher to teach anything. From the standpoint of the highest efficiency this is an unfortunate situation, and until it is remedied no great improvement in science-teaching can be expected.

11. *Academic training of general-science teachers.*—If general science is to be taught successfully, it is obvious that exceptionally well-prepared teachers are necessary. The questions arise: Is the subject now being taught by teachers especially prepared in science? How much science training have these teachers had through their collegiate courses? It was to secure data on these problems that question 10 was asked.

Many teachers failed to understand the question or failed to answer it adequately. The data for 48 teachers are chosen as typical of the group. Unfortunately, agriculture was not included in the questionnaire. Therefore it is not possible to state here the preparation these teachers had in that subject.

According to our data, the average teacher of general science devoted, during his collegiate course, the following number of semester hours to the study of each of the sciences named: 1.4 hours to astronomy; 2.12 hours to geology; 13.2 hours to chemistry; 5.4 hours to zoölogy; 5.4 hours to botany; 1.9 hours to physical geography; 9.6 hours to physics; 3.0 hours to physiology and bacteriology; 0 hours to general science.

Teachers are best prepared in chemistry, physics, zoölogy, and botany. They are twice as well prepared in physics and chemistry,

as measured by the number of semester hours, as are teachers of zoölogy and botany. They are very poorly prepared in geology, physical geography, physiology, and bacteriology.

It appears that a special course for the preparation of prospective teachers of general science is needed in colleges and universities. Such a course should include approximately eight hours in each of the following sciences: chemistry, physics, zoölogy, botany, and possibly agriculture. The course should also include at least four semester hours of work in geology and physical geography, astronomy, physiology, and bacteriology. In addition, there should be at least a two-hour course in general science, and at least two hours of required observation and practice teaching in the subject of general science. At present science teachers in the high schools of Iowa have had approximately forty hours of work in science during their collegiate course. They have majored in some one department, in which more than half of their work in science was taken. Our present organization is chiefly directed toward making teachers of the special sciences. Reorganization and an increase in the amount of work in science are necessary, if the colleges and universities expect to meet the needs and demands of the high school.

12. *Science courses in the high school.*—The relative frequency of occurrence of different courses in science in the eighth to twelfth grades, inclusive, is shown by the following figures, which include 100 high schools. In 42 schools geography is taught in the eighth grade; physiology in 26; agriculture in 25; and general science in 4. The figures for the other grades are as given below:

Eighth Grade		First Year of High School		Second Year of High School	
Geography	42	General science	77	Botany	20
Physiology	26	Physiology	21	Agriculture	14
Agriculture	25	Physical geography	17	Physiology	12
General science	4	Botany	16	Physical geography	9
Physical geography	2	Agriculture	13	Zoölogy	9
Elementary science	1	Zoölogy	2		

Third Year of High School		Fourth Year of High School	
Agriculture	30	Physics	67
Domestic science	14	Chemistry	10
Physics	13	Agriculture	7
Physiology	9	Physiology	4

The two subjects occurring most frequently are physiology and agriculture. These occur in all grades. Geography and physiology are the dominant science subjects in the eighth grade. General science is the dominate subject in the ninth grade. Physical geography, botany, and physiology were the dominant science subjects in the ninth grade, but they have been displaced in these schools by general science. Such figures show how extremely individualistic Iowa high schools are. Organization and standardization is needed. At present we do not know what to teach.

13. *Reasons for not introducing general science.*—A number of the replies from Iowa high schools not teaching general science state their reasons. A summary of the reasons given includes the following:

1. We have no room in which to teach general science.
2. We are using our physiology as a sort of general-science course.
3. Work of the first year in high school is already too heavy.
4. I think general science covers too much ground and gives too much smattering knowlege, and this becomes unscientific. I have always considered it a smattering of several things and not enough of any one to make a lasting impression.
5. I consider it of little value in the high school as now organized, but worth while in the seventh or eighth grade.

14. *Limitations of general science.*—The limitations of present courses in general science most commonly noted by Iowa teachers and principals are:

1. A vast amount of work is attacked, without being fixed in the mind of the student.
2. At present it is difficult, if not impossible, to know what phases should be most emphasized.
3. The average young teacher does not know science well enough and has not had sufficient experience in the work, to make the course very valuable.
4. Little or no opportunity as yet has been provided for field work, and the laboratory work is very unsatisfactory.
5. "Our worst handicap is to find teachers fitted to teach a subject which covers so many different sciences. Under the average teacher it becomes an elementary course in his specialty. If he is a physicist the course is elementary physics; if, on the other hand, he majored in agriculture or biology the course becomes an elementary course in agriculture or biology. To call it a 'general' science course is to misapply the term."
6. The course cannot be covered in one semester; it should be a full year's work. If made a full year's work it displaces to a considerable extent the

biological and earth sciences in the ninth grade. Several principals do not feel that this is justifiable.

7. The most serious objection is to the character of the textbooks. Almost every respondent mentions this fact. The textbooks are entirely inadequate. One man says: "If the good parts of five or six books that are now on the market in general science could be put together in one text, with some modifications, a suitable text might be provided. At present all the books are 'baby' books."

8. No college-entrance credit for the subject is frequently mentioned as a serious objection.

9. It does not teach the pupils to think in scientific terms.

10. It does not prevent failures in later specialized sciences. Seven teachers say: "We have not been able to trace any effects of the course in the attitude of students toward later science courses." The teachers frankly state that they are not aware, in their physics classes, whether a pupil has had general science or not.

15. *Value of general science.*—The values placed upon general science by high-school principals and teachers are varied. A large majority of those who have introduced it frankly state that it is an experiment, and that they do not know as yet just how valuable the course may prove. Many feel that the course is valuable, but are unable to state why. Other teachers are positive that the course does not measure up to their expectations, while a third group feel that the course is among the most valuable in the high school. Among the values most commonly noted by members of the third group are the following:

1. General science teaches the pupil how to study a science, how to think in scientific terms. Answer: Special courses in science will do this as well.

2. General science prepares for the study of physics and other sciences; it is an interesting and easy approach to special science. Answer: Elementary rather than general science would do this even better.

3. General science develops an inquiring spirit. Answer: All subjects should do this.

4. General science gives a summary of the fundamentals of science; it gives children scientific information which they crave. Answer: Good if true.

5. General science helps bridge the gap between the work in the eighth and the ninth grades. Answer: Not proved.

6. General science prevents many failures in the later specialized sciences. Answer: Not proved.

7. General science gives pupils who do not go on some idea of the field of science. Answer: Yes, valuable for this.

Professor John F. Woodhull of Columbia University, in a brief article which appeared in *School Science and Mathematics*, October, 1914, gave a summary of opinions concerning the value of courses in elementary and general science. The trend of opinions in favor of such courses was as follows:

1. Young people, in the upper grades of the grammar school and in the high school, desire information from the whole field of science. They are in the depths of superstition about common things. The problems of real life are not differentiated, after the manner of specialized science, into astronomy, chemistry, zoölogy, physics, botany, and the like. The greatest need, and likewise the greatest demand, among even the highly educated, is for *information* rather than *training* in science. Attention should be focused on teaching children rather than subjects. All workers and students require training *in their specialty*, but in other fields they want knowledge in simple form and by the most direct method. This makes general science necessary. Instruction in science throughout the elementary school and high school should be general rather than special.

2. The public needs unmistakably require a new organization of science instruction according to *projects*. These projects should be derived largely from experience. There should be books, not one but many, and these should be used quite freely as in history and in English. The teaching in science should be quite as informational as it is in history, English, and other subjects. The study of *projects* in science will necessitate the breaking down of the boundary fences that have been erected between highly specialized sciences. General science should be adapted to local conditions and may not be universalized. Many projects elaborated by ingenious and skilled teachers should be published in a series of small books or pamphlets for the use of pupils. Teachers may select from these as time, place, and circumstances require. Enough of this material may easily be prepared to occupy many years of study on the part of the pupils. What is worth while to know from the fields of astronomy, botany, chemistry, geology, meteorology, physics, physiology, zoölogy, etc., may be thus acquired.

NORTH CENTRAL SECONDARY SCHOOLS

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During the week of March 20, 1916, the North Central Association of Colleges and Secondary Schools held its annual meeting in Chicago. This was the twenty-first year of the Association's existence. As in each previous year, the Association, among other achievements, accredited a long list of secondary schools. This year the number was 1,128.

In order to have a basis for judging the character of the work of the various schools applying for recognition, the Board of High School Inspectors (as each year previously) collected a mass of statistical material respecting each school. In previous years these items of statistics have, in general, never been seen or scrutinized by anyone save members of the Board itself. They served their temporary purpose, were filed away, and straightway forgotten. Nor did the printed list of accredited schools consist of anything more than a bare enumeration of names.

This year an innovation was undertaken. It was seen by some that golden opportunities for gathering data for scientific studies of schools were being neglected. It was felt that the statistical riches which the several reports from the high schools yielded ought not to be so carefully garnered and so carelessly evaluated. It was proposed that a policy of expansion and of greater publicity and service be inaugurated, and such a policy has consequently been begun.

In the *Lists of Secondary Schools Accredited by the North Central Association* (a bulletin just off the press and being distributed generally) the following significant items of record appear after each recognized school: (1) date since continuous accrediting; (2) total high-school enrolment; (3) number of weeks of actual school work; (4) total number on the high-school teaching staff; (5) total number of teachers of academic subjects; (6) total number

TABLE I

General Summary

	Colorado	North Dakota	South Dakota	Illinois	Indiana	Iowa	Kansas	Michigan	Minnesota	Missouri	Montana	Nebraska	Ohio	Oklahoma	Wisconsin	Wyoming	Total
Total number of schools accredited	38	33	23	163	78	72	73	112	85	61	23	67	177	20	96	5	1,128
Number unqualifiedly accredited	29	32	17	119	57	61	61	89	76	48	20	47	108	13	76	3	856
Number warned	9	.....	4	30	15	6	8	8	.....	8	.....	9	52	5	16	1	171
Number dropped	.....	.....	1	5	.....	1	5	3	.....	2	.....	4	1	1	1	.....	24
Number new 1916*	1	2	14	6	5	4	15	9	5	3	11	17	2	4	1	101	
Total high-school enrolment†	12,868	4,615	4,390	69,039	29,891	22,686	23,013	39,849	29,244	24,509	5,672	16,052	67,961	7,836	28,115	1,054	386,581
Average high-school enrolment	338.63	139.84	182.91	423.55	373.63	324.08	287.52	343.52	348.14	389.03	226.88	203.19	427.42	313.44	292.84	210.80	339.40
Schools having 34 weeks‡	.....	.....	.....	1	4	.....	1	1	.....	4	.....	.....	1	.....	.....	.....	12
Schools having 35 weeks	1	1	.....	4	2	.....	1	.....	.....	3	.....	.....	.....	.....	.....	.....	12
Schools having 36 weeks	21	28	21	44	61	45	75	5	65	38	12	78	87	25	50	3	658
Schools having 37 weeks	1	.....	1	17	.....	1	2	1	.....	1	1	.....	1	.....	6	.....	32
Schools having 38 weeks	14	4	1	50	6	9	.....	36	18	6	6	1	49	.....	25	1	220
Schools having 39 weeks	.....	.....	.....	7	4	.....	.....	11	1	1	2	.....	1	.....	1	.....	25
Schools having 40 weeks	.....	.....	.....	38	4	2	.....	61	.....	10	4	.....	20	.....	13	1	155
Total number in high-school teaching staff	616	330	265	3,156	1,490	1,184	1,070	1,959	1,466	1,197	338	790	2,750	383	1,462	56	18,501
Average number in high-school teaching staff§	16.15	10	11.04	19.37	18.62	16.91	13.37	16.89	17.45	19	13.52	10	17.29	15.32	15.20	11.20	16.24
Total number of teachers of academic subjects	444	227.5	186	2,045	1,036	814.5	813	1,384	903	816	225	612.5	2,070	258	988.5	38	12,852
Average number of teachers of academic subjects	11.68	6.89	7.75	12.54	12.95	11.63	10.16	11.93	10.75	12.91	9	7.75	13.01	10.32	10.29	7.60	11.28
Number of new teachers of academic subjects	107	69	60	386.5	223	233	215	312	254	219	59	180.5	406	93	236	15	3,043
Average number of new teachers of academic subjects	2.81	2.09	2.50	2.37	2.78	3.32	2.68	2.68	3.02	3.47	2.36	2.29	2.55	3.72	2.35	3	2.67
Number of teachers of academic subjects new this year not meeting standard 2	8	1	.....	14	19	3	67	24	12	12	1	20	14	7	0	0	204
Average number of new teachers of academic subjects this year not meeting standard 2	0.21	0.03	.....	0.08	0.23	0.04	0.83	0.20	0.16	0.19	0.04	0.25	0.08	0.28	0	0	0.18
Total number of teachers of vocational subjects	183	110.5	79	1,002	462	369	381	567	553	382	113	176.5	647	125	464.5	18	5,630.5
Average number of teachers of vocational subjects	4.81	3.34	3.25	6.14	5.7	5.27	4.76	4.89	6.58	6.06	4.52	2.23	4.07	5	4.83	3.60	4.95
Number of new teachers of vocational subjects	50	48	33	226.5	116	113	159	124	150	123	33	79.5	158	39	96	1	1,546
Average number of new teachers of vocational subjects	1.31	1.45	1.37	1.38	1.45	1.61	1.98	1.06	1.78	1.95	1.32	1.06	0.99	1.56	1	.20	1.35
Average number of academic units given per school	21.41	18	17.62	21.15	21.16	23.52	22.90	22.21	23.87	22.05	20.40	19.08	22.24	21.02	19.73	21.75	21.13
Average number of vocational units given per school	8.12	9.72	6.46	9.45	9.95	9.20	10.13	9.10	12.65	8.23	11.22	5.84	7.26	13.22	9.32	10.80	9.41
Number of boy graduates last year	649	244	278	3,571	1,908	1,378	1,324	2,319	1,617	1,217	301	963	4,017	385	1,900	32	22,095
Average number of boy graduates last year	17.08	7.39	11.58	21.89	23.85	19.68	16.55	19.99	19.25	19.32	12.04	12.19	25.26	15.40	19.79	6.40	19.39
Number of girl graduates last year	999	331	417	4,443	2,410	2,031	2,078	3,079	2,577	1,756	406	1,573	5,048	589	2,368	70	30,159
Average number of girl graduates last year	27.33	10.03	17.37	27.26	30.12	29.01	25.97	26.54	30.67	27.87	16.24	19.65	31.74	23.56	24.66	14	26.48
Number of entering boys in fall of 1915	1,812	712	603	10,253	4,237	3,160	3,524	6,467	3,715	3,395	748	2,286	10,683	1,021	4,230	227	55,625
Average number of entering boys in fall of 1915	47.68	21.57	25.13	62.82	52.96	45.14	44.05	55.75	44.23	53.88	29.92	28.93	67.18	40.84	44.12	45.40	48.83
Number of entering girls in fall of 1915	2,131	905	797	11,502	4,209	3,743	4,507	6,959	4,732	3,997	989	2,548	11,417	1,393	4,701	281	64,573
Average number of entering girls in fall of 1915	56.07	27.42	33.21	70.56	52.61	53.47	56.33	59 99	56.33	63.43	39.56	32.25	71.80	55.72	48.96	56.20	56.63

*Arizona also has two schools accredited, these being added after the form for this table had been set up.

† Note.—The compilations of this entire summary (except those of the first five lines) were made up from the *total number of schools* reported by the inspectors. Since the Board of Inspectors at its Chicago meeting did not accredit some of these schools and added others, the figures given here do not in every case represent the *exact* totals and averages for the accredited schools of each state. The discrepancies, however, are slight.

‡ The following additional items are to be found: schools having 31 weeks, one (Kansas); schools having 32 weeks two (Indiana); schools having 33 weeks, two (Illinois, one; Missouri, one); schools having 5½ weeks, one (South Dakota) schools having 37½ weeks, one (Wisconsin); schools having 42 weeks, one (Illinois); schools having 48 weeks, one (Michigan).

§ The averages in each case listed are per school.

of teachers of academic subjects new to the particular school this year; (7) total number of new teachers of academic subjects not fully meeting the standards set by the North Central Association; (8) total number of teachers of vocational subjects; (9) total number of teachers of vocational subjects new to the system this year; (10) total number of academic units offered this year; (11) total number of vocational units offered this year; (12) total number of pupils graduating from the high school last year, boys and girls separated; (13) total number of entering (Freshmen) pupils in the fall of 1915, boys and girls separated.

In addition to this detailed list of schools and statistics, totals for each of the sixteen states in the North Central Association are worked out, and a general summary of all items for the entire group of states is presented. A reprint of the general summary is given here (Table I). Persons interested in the detailed items of the several schools are urged to study the Association's bulletin.

From the foregoing sketch of the material collected and compiled by the Board of Inspectors it is obvious that a valuable basis for comparisons has been established. A principal or superintendent may compare and contrast his school not only with others in his own state, but with the secondary schools in sixteen states. He may do this in reference to size of school, number of units of work offered, length of school year, size of teaching staff, proportion of new teachers, and the relation of graduating students to incoming students. He may also, in most cases, form a judgment respecting the continuity of the policy of each school in upholding North Central standards and thereby maintaining continuous relationship with the Association.

The accompanying tables, charts, and graphs based on the detailed statistics collected by the Board of Inspectors this year may prove interesting.

Table II gives a complete summary of the action of the Board this year respecting the accrediting of secondary schools. In analyzing it one notes the following:

1. Twenty-four schools that were on the list last year were this year dropped from the list. In most cases this action was taken because the school violated standard No. 2 (respecting the

qualification of teachers), standards Nos. 5 and 6 (respecting hygienic condition of building and efficiency of instruction), and standard No. 9 (respecting excessive number of pupils per teacher).

TABLE II

SUMMARY OF ACTION BY THE ASSOCIATION

	Old Schools Dropped	Old Schools Unqualifiedly Accredited	Old Schools Accredited but Warned	New Schools Accredited, 1916	Total Number Schools on List This Year
Arizona	.....	.....	.....	2	2
Colorado	0	29	9	0	38
Illinois	5	119	30	14	163
Indiana	0	57	15	6	78
Iowa	1	61	6	5	72
Kansas	5	61	8	4	73
Michigan	3	89	8	15	112
Minnesota	0	76	0	9	85
Missouri	2	48	8	5	61
Montana	0	20	0	3	23
Nebraska	4	47	9	11	67
North Dakota	0	32	0	1	33
Ohio	1	108	52	17	177
Oklahoma	1	13	5	2	20
South Dakota	1	17	4	2	23
Wisconsin	1	76	16	4	96
Wyoming	0	3	1	1	5
Total	24	856	171	101	1,128

2. Eight hundred and fifty-six schools were unqualifiedly recommended for accrediting.

3. One hundred and seventy-one old schools were warned for violations of certain standards (usually for the same violations as indicated in No. 1 above) and given one year in which to correct the weakness.

4. One hundred and one schools were accredited for the first time.

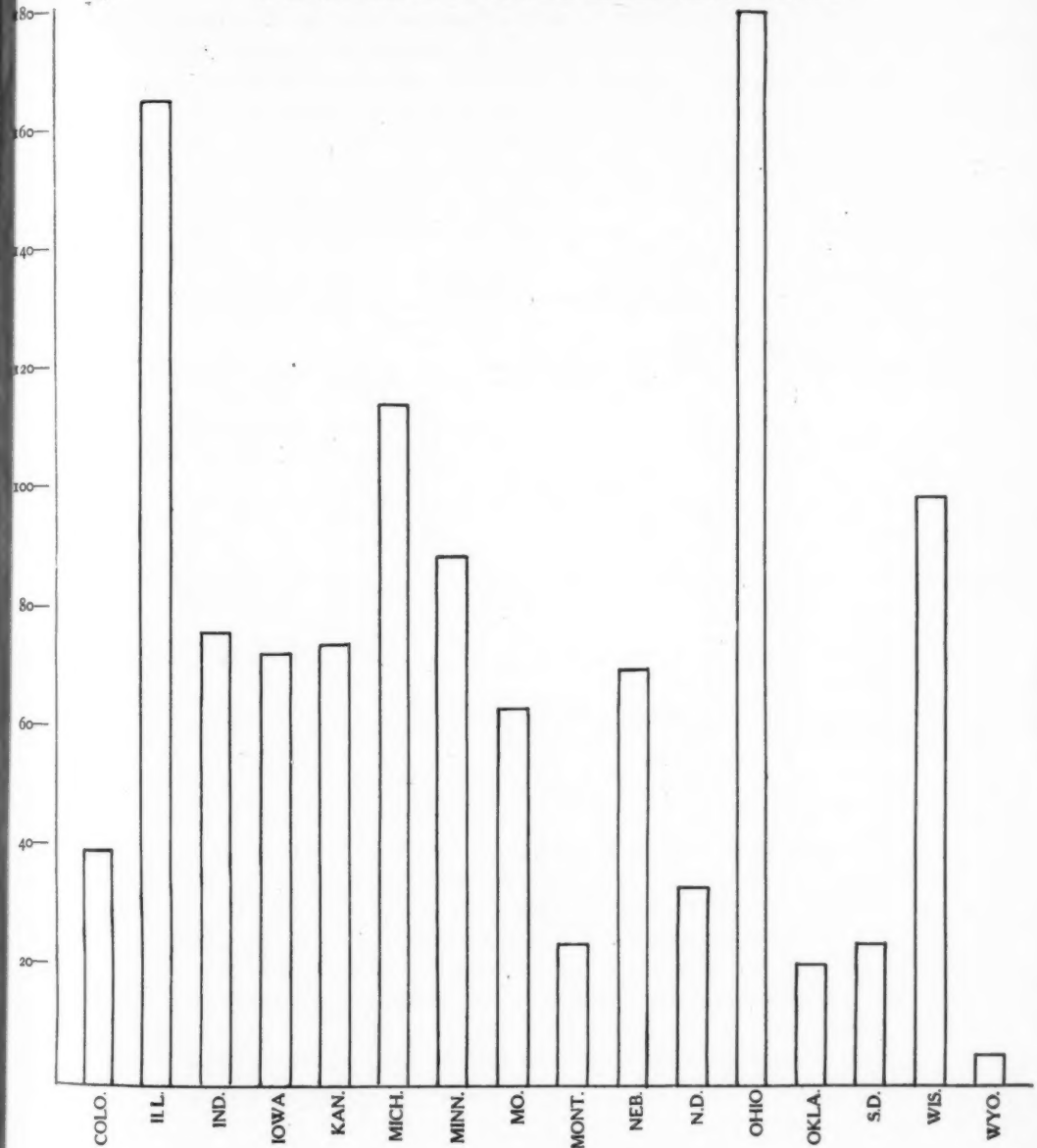
5. The total number of schools on the North Central list this year is therefore 1,128.

Chart I shows the relative distribution of these schools over the several states.

Table III gives the sizes of schools by states; also the number of pupils in the smallest school accredited in each state and in the largest school accredited. An analysis of this table shows that there are 97 schools on the North Central list that enrol fewer than

CHART I

SHOWS RELATIVE NUMBERS OF NORTH CENTRAL SCHOOLS BY STATES



100 pupils each. In most cases such schools are private or denominational schools. The smallest of these schools seems to be in Illinois and enrols but 31 pupils, though the statistics show that six teachers of academic subjects are employed in this school. The largest school on the North Central list enrols, on the other hand, 2,615 pupils. This is the Detroit, Michigan, Central High School. There are, however, 27 schools in the North Central territory with enrolments exceeding 1,500 each.

TABLE III

	Sizes of High Schools*						Number Pupils in Smallest School	Number Pupils in Largest School
	Under 100	100–300	301–500	501–900	901–1,500	Over 1,500		
Colorado	4	20	6	2	4	0	68	1,389
Illinois	17	76	29	16	13	6	31	2,300
Indiana	2	47	12	11	4	2	17	2,300
Iowa	1	37	17	7	5	0	95	1,250
Kansas	4	51	14	6	3	0	40	1,407
Michigan	5	53	23	9	6	2	55	2,615
Minnesota	3	57	12	1	4	4	60	2,000
Missouri	9	28	5	3	9	3	28	2,006
Montana	7	8	6	2	0	0	52	762
Nebraska	12	46	5	0	1	1	50	1,809
North Dakota	14	17	1	1	0	0	64	534
Ohio	11	76	30	27	8	8	40	2,095
Oklahoma	0	12	2	4	0	1	118	1,619
South Dakota	4	16	2	1	0	0	72	524
Wisconsin	4	60	14	7	6	0	58	1,147
Wyoming	0	4	1	0	0	0	127	349
Total	97	608	179	97	63	27		
Average per state	6	38	11+	6	4−	2−		

* Fifty-seven of the 1,128 schools gave no data on this question.
Median school = between 100 and 300 pupils.

The fact, however, that 608 secondary schools—that is, more than half of all those accredited—have enrolments that range between 100 and 300 pupils is significant. It shows clearly that the North Central secondary schools are, for the most part, schools that are distributed among the moderate-sized cities and towns and that also serve large constituencies in the rural and semi-rural districts.

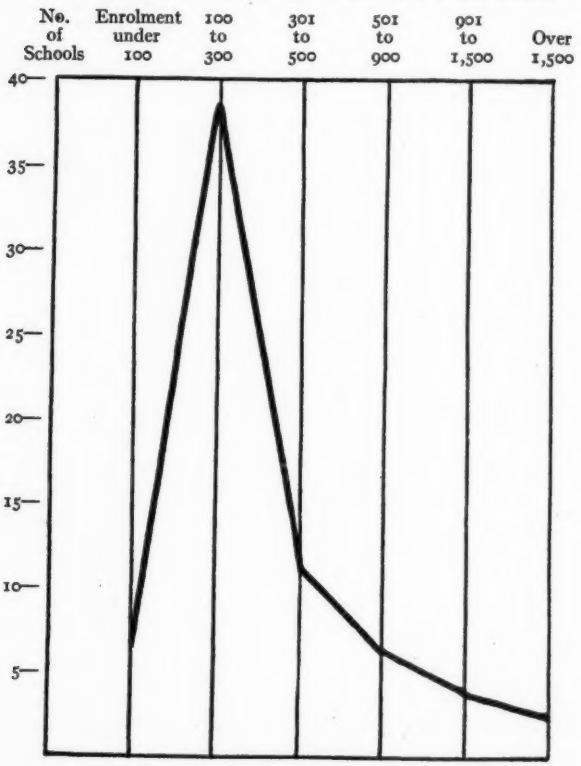
Graph I shows in a different form from Table III the average distribution of schools of the various sizes.

Graph II shows the average enrolment in high schools in the several states.

Another interesting fact revealed by the statistics gathered is that of the entire 1,128 accredited schools all but 30 have 36 weeks

GRAPH I

DISTRIBUTION OF SCHOOLS PER AVERAGES FOR ALL STATES



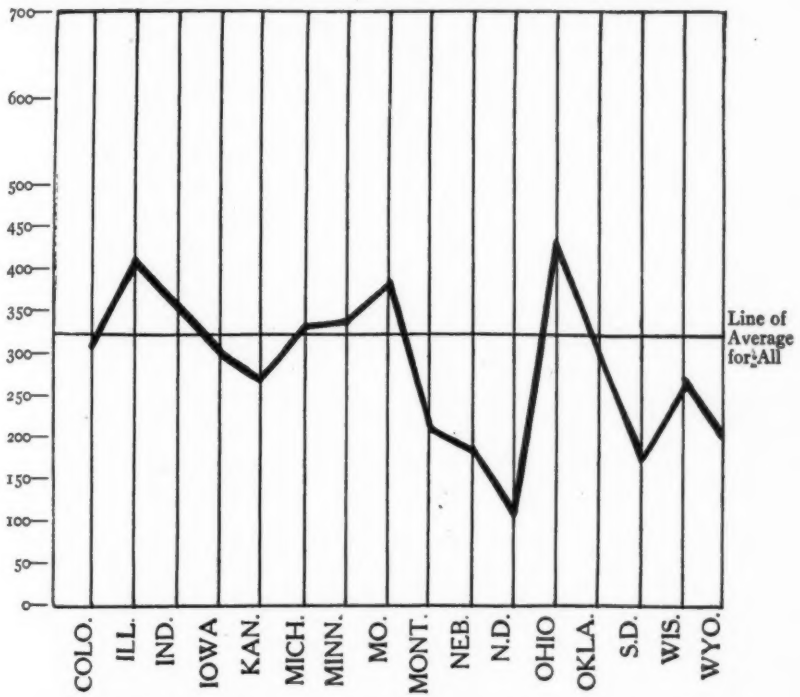
or more in the school year. Indeed with the exception of Michigan this is the norm for all the states. In Michigan the norm is from two to four weeks above these figures, 36 of the schools of that state having a school year of 38 weeks and 61 of 40 weeks.

Chart II shows the conditions in respect to this topic.

Within the 1,128 accredited schools 18,501 teachers compose the teaching staffs. This gives an average of 16.24 teachers per school. If we divide the staffs into teachers of academic subjects and

GRAPH II

SHOWS HIGH SCHOOL ENROLMENT AS AVERAGED FOR EACH STATE



teachers of vocational subjects, 12,852 constitute the former group and 5,630 the latter, that is, an average of 11.28 teachers of academic subjects per school and of 4.95 teachers of vocational subjects per school.[1]

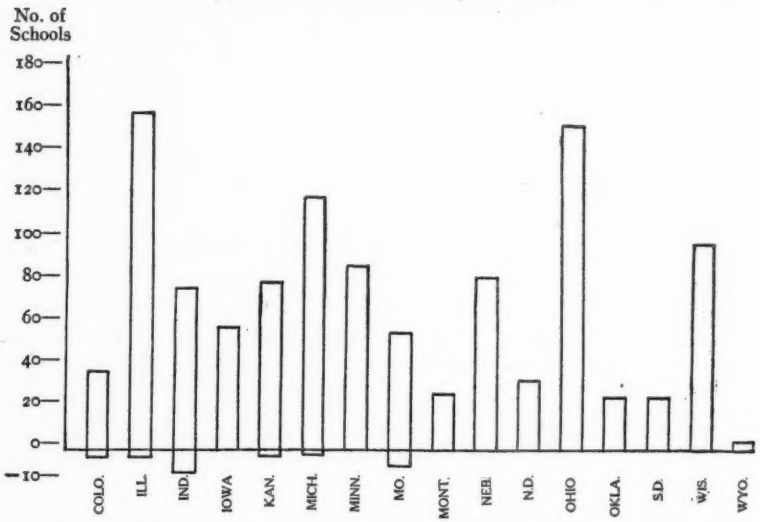
[1] It should be remembered that in collecting data for these compilations the following subjects were everywhere considered to be vocational subjects, namely, agriculture, manual training, domestic science and arts, drawing, and commercial branches. In reading all these figures the *note* following Table I should also be kept in mind.

Of the teachers of academic subjects 3,043, or 2.37 per cent of the whole number, were new to the particular school system this year. On the other hand, of the teachers of vocational subjects, 15,046 or 2.74 per cent of the entire staff, were new to their particular positions this year. These facts give rise to several queries:

CHART II

SHOWS NUMBER OF SCHOOLS WITH THIRTY-SIX WEEKS (OR MORE OR LESS) IN THE SCHOOL YEAR

(The base line is that for thirty-six weeks)



Why are there more new teachers of vocational subjects, relatively speaking, than teachers of academic subjects? Is it because schools are adding more and more vocational work to their curricula? Is it because salaries for vocational teachers are unusually lacking in uniformity, making it therefore advantageous for successful teachers of the newer subjects to be constantly changing positions? Is it because the business world attracts the older teachers and that, in consequence, the places vacated have to be recruited from the ranks of the inexperienced? Or is it because chance this year gave us the ratio we have, and that another year

the opposite conditions might be found to exist? No one of course knows the answers to any of these queries. Continued comparative studies alone will give us the replies.

A second interesting fact disclosed by the same group of figures just considered is that of the 3,043 teachers of academic subjects new to the system this year only 204 did not fully meet the standards of the Association respecting academic and special training. That is, only 0.067 per cent of the entire group of new teachers of academic subjects are without the equivalent of a college degree and of at least eleven semester hours of professional study. When, moreover, it is considered that this is the first year the Association has sought to enforce this standard respecting that training and that doubtless many school boards elected teachers in ignorance of the fact that the standard was to be in force this year, it seems to the writer that an unusually high degree of compliance with the ruling of the Association was secured.

Chart III shows the ratio of academic teachers to vocational teachers, both in respect to each state separately and in respect to the averages for the entire Association territory. Chart IV shows the ratio of new teachers of academic subjects to the new teachers not fully meeting the standard respecting academic and professional training. Chart V shows the average number of teachers per school in the several states, the line of average for all falling at the mark 16.24.

The number of academic units and vocational units offered in the several schools of course varies widely. The range is: for academic units, from 16 to 47; for vocational subjects, from 0 to 32. It is of course impossible in a short review like the present to make an analysis in this respect for each state in the Association. The following analysis of the situation as it is found in Michigan may, the writer thinks, be taken as nearly typical. Here a study of the detailed statistics yields the following returns:

Academic units.....	14	15	16	17	18	19	20	21	22	23	24	25	Over 25
Number schools.....	1	0	3	5	10	18	16	15	11	9	4	5	18

The median number of academic units for Michigan is therefore 21; the average 22.21.

In like manner the number of vocational units offered is as follows:

Number units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Over 16
Number schools	3	5	5	5	5	7	13	11	7	10	9	6	7	4	3	1	8

Here the median is 11; the average 9.10. The number of teachers per unit, however, is precisely the same for academic work and vocational work, i.e., 1.86 teachers per unit offered.

CHART III

SHOWS RATIO OF ACADEMIC TEACHERS TO VOCATIONAL TEACHERS

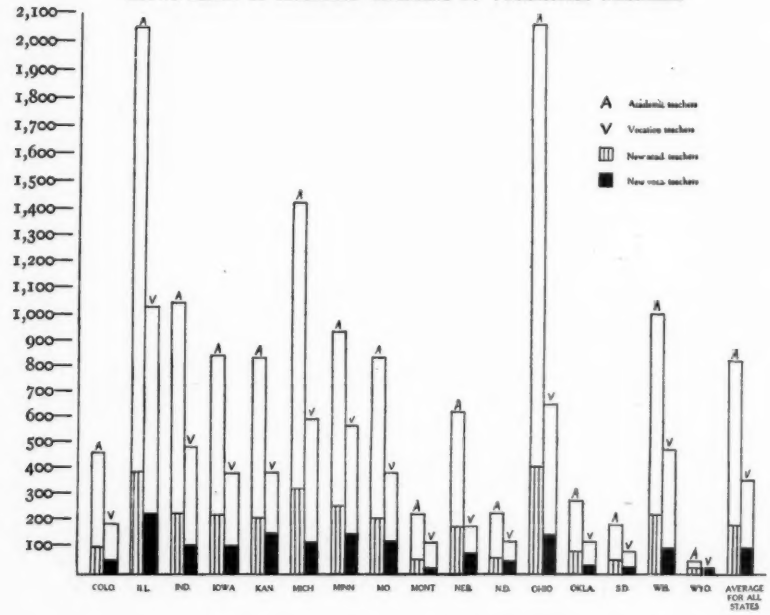
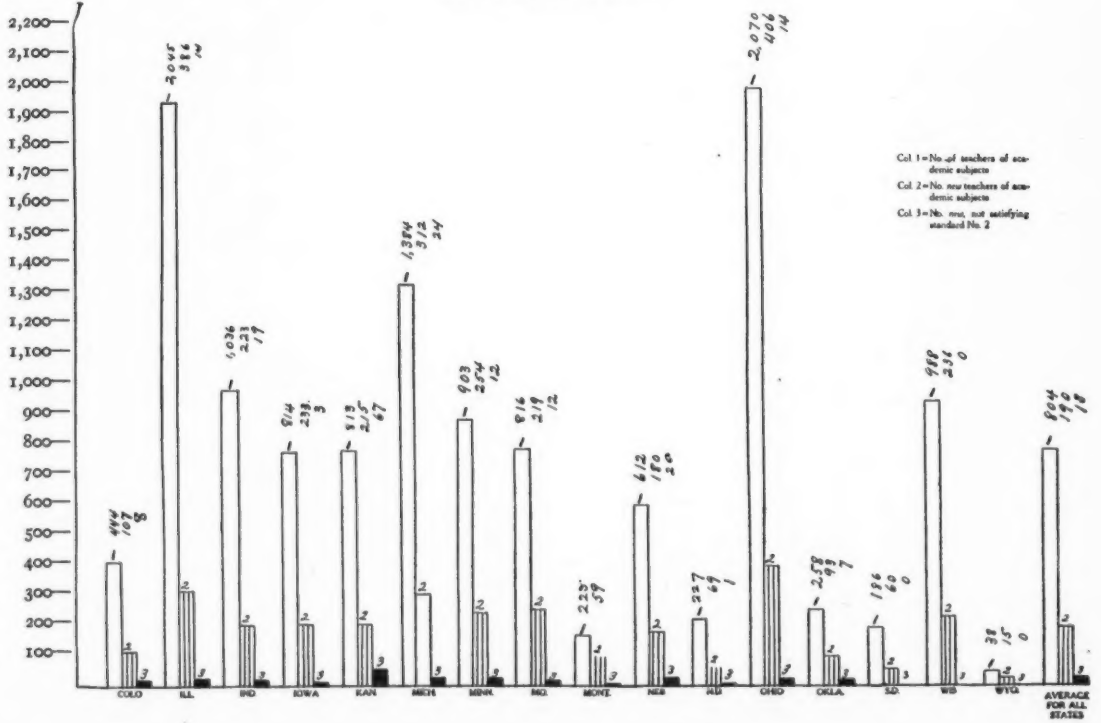


Chart VI gives an idea of the average distribution by states.

The final set of items studied by the Association deals with the number of graduating students and of entering (Freshman) students. As doubtless would be expected by anyone voicing a guess, the number of girls who graduated last year very greatly outnumbered the boys who graduated, the excess being 18,064. In like manner in every separate state the girl graduates were in excess

CHART IV

SHOWS RATIO OF ALL TEACHERS OF ACADEMIC SUBJECTS TO *NEW* TEACHERS OF THOSE SUBJECTS AND TO SUCH *NEW* TEACHERS AS DO NOT SATISFY STANDARD NO. 2



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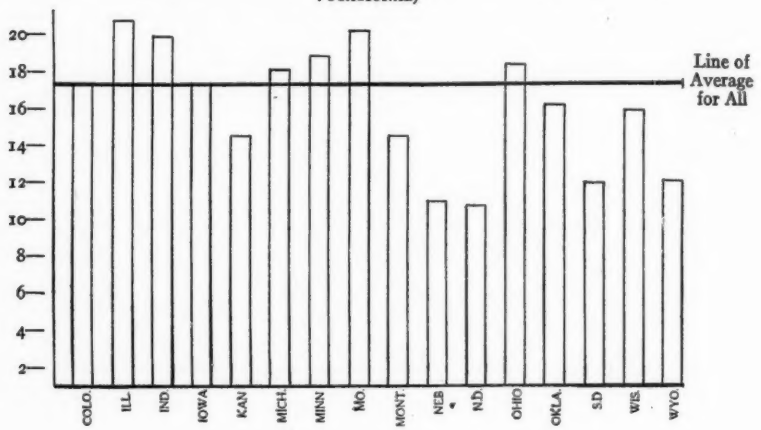
of the boys. On the other hand, and possibly contrary to what would be ordinarily surmised, the number of entering (Freshman) girls exceeded the number of entering (Freshman) boys by a relatively small number, the actual figures being 8,948; that is, the excess of girl entrants is less than half as large as the excess of girl graduates, albeit in every state except Indiana the aggregate number of Freshman girls is in excess of that of Freshman boys. Moreover, to use Michigan again as a type, in fourteen of the accredited

CHART V

SHOWS THE AVERAGE NUMBER OF TEACHERS PER SCHOOL (ACADEMIC AND VOCATIONAL)



schools of that state the boys who graduated last year exceeded in number the girls who graduated, while in each of 23 other schools in the state the number of entering (Freshman) boys exceeded the number of entering (Freshman) girls.

These facts again raise interesting queries. Are boys being attracted by the schools more than they were even four years ago? If so, is the fact due to the phenomenal increase in vocational work that has been offered in the high schools during that time? Is there reason to expect that four years hence graduating classes will be composed of approximately equal numbers of boys and girls?

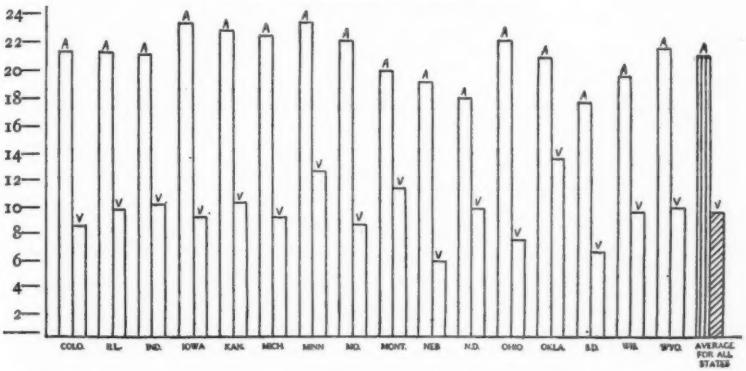
If school mortality is to continue to be much more excessive with boys than with girls, at what period does the greatest elimination take place, and why should it take place at all?

Chart VII gives a view of the relative numbers of entering and of graduating students distributed by sexes.

To attempt to give the medians, averages, or totals of the several statistical items gathered for each state separately would take us

CHART VI

SHOWS RATIOS OF THE AVERAGE NUMBER OF ACADEMIC AND VOCATIONAL UNITS GIVEN PER SCHOOL IN EACH STATE



beyond the profitable range of this article. Persons thus interested can compute these facts for themselves from the official bulletins. It may, however, be worth while to consider one or two sets of figures relating to particular states, and again we select those of Michigan as representative.

The following are the number of schools in Michigan with an enrolment lying within stated ranges, namely:

Under 100	100–150	151–200	201–250	251–300	301–350	351–400	401–450	451–500	501–550
4	21	23	11	16	8	5	7	3	1

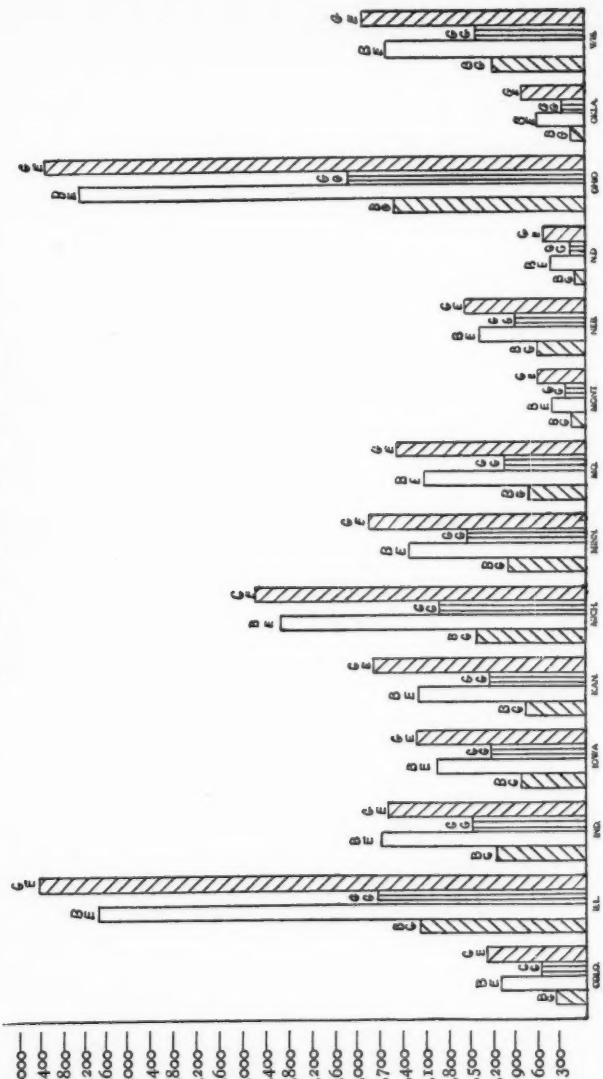
551–600	601–650	651–700	701–750	751–800	801–850	851–900	901–950	951–1000	Over 1000
1	0	3	1	1	2	0	1	1	6

The median accredited school in Michigan, therefore, enrols between 250 and 300 pupils; the average enrolment is 343.52.

CHART VII

SHOWS NUMBERS OF BOYS GRADUATED LAST YEAR (BG); BOYS ENTERED LAST YEAR (BE); GIRLS GRADUATED LAST YEAR (GG); AND GIRLS ENTERED LAST YEAR (GE)

(Wyoming and South Dakota are omitted)



In like manner the number of teachers in the high-school staff is shown thus:

Number teachers	5	6	7	8	9	10	11	12	13	14	15
Number schools	4	4	13	20	21	11	5	6	5	7	8

Number teachers	16	17	18	19	20	21	22	23	24	25	Over 25
Number schools	2	2	2	4	0	1	0	1	1	3	17

The median accredited school in Michigan therefore employs 19 teachers; the average number in the schools is 16.89.

The ratio of new teachers of academic subjects in Michigan to the entire number of teachers of academic subjects in Michigan is 312:1384, that is, approximately 1:4. A similar ratio exists between the new teachers of vocational subjects in Michigan and the entire number of teachers of vocational subjects in Michigan. In this instance the figures are 124:567, that is, approximately 1:4½.

In conclusion the writer is impelled to say that, from his point of view, the Board of Inspectors has this year done a highly creditable and scientific piece of work. He knows, too, that the plan of the Board is to undertake a similar series of studies another year, and for this he has high hopes and much faith.

A SURVEY OF RETARDED SCHOOL CHILDREN

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University of Chicago

The purpose of this paper is to describe the methods employed and the results obtained in a survey of retarded school children. This survey was recently made in a small town of northern Minnesota. The town is on the iron range, a fact which determines to a large extent the character of the school children. A large proportion of the retarded children were foreign-born. The population of the town is between 7,000 and 8,000, and the total school population about 2,000. Because of the wealth derived from the mines the funds available for school purposes are abundant. The buildings are well constructed, well equipped, and well manned. As a whole the system represents the most intelligent school guidance which is possible in a community of that size. From the point of view of the school authorities, the motive which led to the survey was the law, recently passed in the state of Minnesota, by the terms of which $100.00 per year is paid by the state for the training of each subnormal child in a school district. The supervisors and teachers of the grades were aware of the fact that many retarded children were present in the kindergarten and throughout the grades. To remove the burden of the retarded children from the grade teachers, they, therefore, welcomed an examination of all retarded cases. If in the report which follows the characteristics of the individual case seem to be overemphasized, it must be borne in mind that the causes of retardation are always causes which operate in some particular individual. In order to ascertain what these causes are, each case must be studied as a problem which is entirely unique.

In carrying out the survey the author of this article was assisted by the two supervisors of the grades, the school physician, and the school nurse, as well as by the administrative co-operation of the superintendent. Two rooms were set aside in one of the buildings,

one for the physical examinations and the other for the mental tests. The various steps involved in carrying out the survey may be enumerated as follows:

1. A preliminary study of the amount of retardation by means of a grade and progress study-card. This work was carried out by the supervisors.

2. An information blank, a copy of which is here published, which was filled out by the school physician and school nurse.

3. A physical examination, the details of which will be given below.

4. Mental tests to determine the mental level of the children.

5. Analysis of special difficulties. A psychological analysis of the child's capacities and attainments with view to prescribing educational treatment is necessary. It was not possible, in the limited time devoted to this survey, to make this individual study of the special difficulties of each retarded pupil. The intelligent and successful handling of the children in the subnormal classroom requires that such an analysis be made.

The grade and progress study-card was that published by the Department of Public Instruction of the state of New Jersey. A copy of this card is here printed, with the results of our survey:

GRADE AND PROGRESS STUDY-CARD

To the teacher.—The object of this card is to gather data pertaining to your pupils' school progress. Record in the proper spaces the number of your pupils in Grade 1 who have been in school 1 year, 2 years, etc., the number in Grade 2 who have been in school 1 year, 2 years, 3 years, etc. Begin the record of the years in school with the child's first entrance into a first grade of any public or private school, not including kindergartens. Count as a year's attendance any time exceeding one-half of a school year, disregarding any period less than one-half year. The memory of your pupils will in general be reliable in determining length of time they have been in school, in those cases concerning which you have no record or personal knowledge.

To the teacher.—The numbers appearing at the right of the heavy zig-zag line represent those who are three years and more retarded. Enter all these in the lower left-hand schedule by grades, grouping them into classes according to "Suggestions" pamphlet, pp. 8 to 12. Indicate in the lower right-hand schedule the number of pupils at the left of the heavy zig-zag line who should be classed in the special classes A, B, C, but who are not three years retarded.

The instructions to the teacher are explicit and need not be repeated. The classification of the pupils who are three years or more retarded requires some elucidation. Class A is called miscellaneous.

> This class of retarded children consists of (1) foreign-born children, who do not know the English language; the needs of these may best be met by putting them by themselves in schools of approximately 20 or 25 children to a teacher; the school may be ungraded and the requirements for promotion should be liberal and elastic, taking into account ability rather than graded courses of study; (2) children who have entered school late, or who have been irregular in attendance; the needs of these are met in the same way that the needs of the foreign-born children are met, or by the help of a special teacher who can clear up for each one the special difficulties that retard; such a special teacher would receive children from various rooms for short periods each day; this plan is adaptable to places where only a small room is available; (3) physical defectives; these children are sometimes mentally subnormal, but not always so. Their difficulty may be one of defective eyes, ears, vocal organs, or of adenoids and enlarged tonsils. Medical inspection should reveal the seat of the difficulty with these children, and the inspection should result in effective measures for the removal or neutralizing of the difficulty.[1]

Children of Class B are called Incorrigibles.

> This class of retarded children is made up of the habitually lawless. They are those whose influence is harmful to the moral health of the school. Under the laws, the only way to deal with these children is to remove them to a special school, where a course of instruction modified to meet their interests, and methods of control suited to their needs, may be established. Such a course of study should strongly emphasize manual-training activities.[1]

Class C consists of the mentally subnormal.

It will be seen from the results obtained by the preliminary survey that the total number of pupils in the grades is 1,537. The number of children three years or more retarded is 17. The classification suggested by the supervisors is indicated in the appropriate place on the card. This classification, however, was not followed in the segregation of the retarded pupils in the subnormal classroom.

Information with regard to family histories and the development of the children is difficult to obtain from many of the foreign population, but since it is necessary to make a medical diagnosis

[1] State of New Jersey Department of Public Instruction, *The Treatment of Subnormal Children*, Trenton, 1912.

Grades	Years in School												Total	Three Years and More Retarded	Percentage of Pupils Three Years and More Retarded
	1	2	3	4	5	6	7	8	9	10	11	12			
I.....	231	38	1										270		
II.....		164	63	3									230		
III.....			158	75	7	2							242	2	
IV.....			2	137	77	18	7						341	7	
V.....				2	107	68	20	2	1				200	3	
VI.....					1	89	33	16	3				142	3	
VII					1	8	65	36	9	1	1		121	2	
VIII ...							4	47	30	10			91		
Total..													1,537	17	

Classification of Pupils Three Years or More Retarded									Additional Pupils Belonging in the Special Classes, but Not Three Years Retarded							
	Grades								Grades							
Class	I	II	III	IV	V	VI	VII	VIII	I	II	III	IV	V	VI	VII	VIII
A.....			1	5	2	2	1		22	24	54	31	36	12	13	11
B.....					1	1				1		4	2	1		
C.....			1	2			1		13	5	3	1	2	3		

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of each pupil as well as a mental diagnosis the value of this information is very great. The form which was used in this work is shown in Schedule I.

SCHEDULE I

Source of Information.....Date.....
Name.....
Address.....
Age.....Sex.....Nationality.....
Home condition.....
Present complaint.....
Age of parents at time of birth of child. Father.....Mother.....
Serial account of children and miscarriages.....
Developmental history of child:
Birth, full term...Premature....Months..Normal...Instrumental.....
Breast-fed.....Artificial.....What food?.....
First tooth.....Walked.....Talked.....
Diseases of childhood.....
.....
School history, when started.....
Progress.....
Diagnosis.....
Treatment.....

In inquiring about the diseases of childhood, especial attention should be paid to the occurrence of convulsions and fits. While it is true that not all infantile convulsions indicate permanent brain-trouble, it is frequently the case with children who have fits as infants and later become mentally defective.

The physical examination can properly be made only by a physician with the assistance of a nurse. It is necessary for the child to disrobe completely. There should be a suitable examining table, with clean sheets and blankets for covering the pupil. The inspection of the body for evidences of pathological conditions should be preceded by careful anthropometric measurements. These measurements include the weight, heights, sitting and standing, vital capacity as measured by a spirometer, and strength of grip of right and left hand. The nurse should take the temperature by mouth, and record pulse and respiration. The body of the pupil should then be carefully inspected from the crown of the head to the soles of the feet. It is exceedingly rare that such an examination does not reveal some remedial pathological condition. In the hair and scalp *pediculosis capitis* is a common cause of trouble, especially when the hygienic conditions of the home are

poor. These vermin are sources of irritation to the child, and lead to secondary infections which may become serious. The ears should be tested for their auditory acuity and for the presence of wax in the external auditory meatus. The eyes are the seat of various troubles which manifest themselves in the reflexes of the pupils, in latent strabismus as well as in refractive errors. This latter condition, however, is relatively easy to detect and equally easy to correct. It is significant that Ayres, in *The Laggards in Our Schools*, found no correlation between defective eyesight and retardation. Disturbances in motility, such as nystagmus and strabismus, may cause serious difficulty. The nose should be inspected with reference to obstructions in the nasal passages and for the presence of adenoids. The mouth is the seat of many pathological conditions. Inflamed gums (interstitial gingivitis) which result in chronic pus infections of the gums, pyorrhea alveolaris, are extremely common in the defective children who make up so large a part of the retarded school children. Decayed teeth are exceedingly common. The recommendation of the inspector should mention the care of defective teeth by a dentist. The tongue by its motility, by the presence of tremor or deviation, indicates the integrity or disease of certain parts of the nervous system. The throat, as the seat of inflamed or enlarged tonsils, is frequently a source of many physical ailments. The principal of these ailments are infections of the heart, chronic tonsillitis, middle-ear catarrh, and chorea, or St. Vitus' dance. The presence of adenoids can be determined by the mouth breathing and by palpation with the finger. The injurious effects of these structures upon the growth and mental development of the child have been amply demonstrated. Inasmuch, however, as they are exceedingly common in childhood, they may serve to mask a more fundamental cause of retardation. The examiner should never rest satisfied with the discovery of adenoids. The thyroid gland is one of the important ductless glands of the body and should be observed with respect to its enlargement or complete absence. It is well known that cretinism results from the congenital absence of this gland. In the neglected children who constitute so large a part of the retarded school children the gland is frequently enlarged. This is due, in most cases, to infection from the tonsils

and throat. In the chest, the heart and lungs should be carefully examined. Leaky heart valves are exceedingly common in young children, though their presence is often not suspected. A defective heart may exert a very important influence on the growth and development of the child. The lungs, and especially the apices, as the seats of early tuberculosis, should be subjected to careful examination. The abdomen does not often present important pathological changes in retarded school children. Hernias of the umbilical and inguinal regions are to be sought. The enlargement of the inguinal glands are of diagnostic significance in certain conditions. The glands in the arm above the elbow, in the armpits, and in the neck, may give early signs of tuberculosis or syphilis. In the external genitals of the child important causes of retardation may be found. In the male the undescended testicle may cause serious interference with the sexual development of the boy. Various malformations of the prepuce, the chief of which are phimosis or partial phimosis and an abnormally long prepuce, are common. In all cases of this sort circumcision should be recommended. A lax scrotum usually signifies masturbation. The condition of the nervous system is indicated by the reflexes. The chief of these, in addition to those mentioned in connection with the eyes are the pharyngeal, biceps, triceps, umbilical, the cremasteric in the male, the patellar, and the plantar. The sensory capacity of the skin should be tested for the presence of anesthesias. The pain sense, the tactile sense, and the temperature sense may be separately affected. Any marked change in any of these sense departments is indicative of serious nerve-trouble. The coordination of the body, especially in the use of the arms and legs and the Romberg sign, should be tested. The posture of the body, the lateral curvature of the spine and kyphosus should be noted. A Wassermann test should be made in all cases on the blood serum. Recent serological studies of the blood serum in feeble-minded children shows that fully 20 per cent are infected with syphilis.

In the survey upon which this report is based, two tests of general mental level were made, namely, the Goddard revision of the Binet-Simon test, and the Yerkes point scale. In the opinion of the author the point-scale method is destined to supercede the Binet-Simon test. In general the results obtained by the two tests

run closely parallel to one another. There was a tendency to diverge at the lower and upper ends of the scale. The findings in a few of the cases are given in detailed form for purposes of illustration; a summary of the recommendations in each case examined is also given.

S. D. Age, 12; Binet-Simon age, 9⅓; point-scale age, 8+.

Measurements.—Weight, 35.5 kg.; height standing, 146.6 cm.; height sitting, 79.2 cm.; spirometer, 70.6 cubic inches.

Physical examination, made by Dr. Stevens.—Head: there are nystagmoid movements of the eyes; there is pyorrhea alveolaris; there are several carious teeth; the tonsils are enlarged on both sides. Chest: there is marked enlargement of the thyroid gland; the heart is negative; there is bronchial breathing in the apices of both lungs. Abdomen: the abdomen is negative. Glands: the epitroclear gland is enlarged on the left side. Reflexes: the reflexes are negative. Skin: there is *pediculosis capitis*. Co-ordination: the Romberg sign is positive.

Recommendations.—This girl should be placed in the subnormal classroom. She is retarded four years mentally. The tonsils should be removed immediately, as they are probably the source of the enlarged thyroid gland. The teeth should be treated by a dentist. It is probable that the hyperthyroidism due to the enlarged gland is responsible for the incorrigibility of this child. The removal of the tonsils should tend to correct this condition.

D. J. Age, 15; Binet-Simon age, 8⅔; point-scale age, 10.

Measurements.—Weight, 48.7 kg.; height standing, 149.2 cm.; height sitting, 80.4 cm.; spirometer, 160 cubic inches; grip, right, 60; left, 60.

Physical examination.—Head: the eyes are negative; there are several carious teeth; the tonsils are enlarged; the nose is negative. Chest: the heart and lungs are negative. Abdomen: the abdomen is negative. Genitalia: there is a phimosis. Glands: the axillary glands are palpable. Reflexes: the reflexes are negative. Co-ordination: the co-ordination is good. The Romberg sign is negative. Skin: there is a scar on the right side below the twelfth rib.

Recommendations.—The phimosis requires circumcision. The carious teeth should be cared for by a dentist. The mental tests indicate that this boy is five years retarded. He should be placed in a subnormal classroom, and his educational training should consist largely of industrial training, such as manual training, with view to training him in some trade which would make him self-supporting. Since he has not profited by the ordinary school work and in view of his age, I believe it is desirable to lay the emphasis for his future education on manual training.

E. J. Age, 10; Binet-Simon age, 5⅓; point-scale age, 4+.

Measurements.—Weight, 20.9 kg.; height standing, 116.4 cm.; height sitting, 58.75 cm.; grip, right, 20; left, 18.

Physical examination, made by the school physician.—Head: there are several carious teeth; the tongue deviates to the right; the eyes are negative. Chest: there is a slight enlargement of the thyroid gland; there is arythmia of the heart; the lungs are negative. Abdomen: the abdomen is negative. Reflexes: the reflexes are negative. Glands: the glands are negative. Skin: there is a macular rash on the chest and forearms; there is *pediculosis capitis* (alive).

Recommendations.—This girl is five years retarded mentally. She should be placed in the subnormal classroom. It is unlikely that this degree of retardation comes from any environmental cause. Her condition is probably not greatly improvable. She should, however, be given a chance for at least a year in the special classroom. If at the end of that time she should fail to make sufficient progress, she should be sent to the state institution at Faribault. In view of the fact that she has a sister whose condition is similar to her own, a Wassermann test on the blood serum of both would be advisable.

R. L. Age, 12; Binet-Simon age, $7\frac{2}{5}$; point-scale age, 7+.

Measurements.—Weight, 29.7 kg.; height standing, 132 cm.; height sitting, 69 cm.; spirometer, 90 cubic inches; grip, right, 38; left, 40.

Physical examination, made by the school physician.—Head: The teeth are broken and uneven; the tongue is coated; the eyes are negative. Chest: the heart and lungs are negative; there is a slight enlargement of the thyroid gland. Abdomen: the abdomen is negative. Genitalia: there is a long prepuce. Glands: the glands are negative. Skin: the skin is negative. Co-ordination: the co-ordination is poor.

Recommendations.—This boy is over four years retarded mentally. His technical rating is high-grade imbecile. Inasmuch as he is handicapped by the foreign language of his parents, he should be given special educational opportunities in a subnormal classroom, in which a large part of his work should be in the nature of manual training. Efforts should be made to train him in a trade. If, after a trial of one year, there is no considerable improvement it would be advisable to have him sent to the state institution for the feeble-minded.

F. O. Age, 7.

Boy did not speak; mental tests were therefore impossible. When asked "Do you want some candy?" he shook his head. He stands up when told to do so. Puts hands in pockets when told to do so. Shows and folds hands when told to do so. His vocabulary has probably been limited to a dozen words.

Measurements.—Height standing, 114.8 cm.; height sitting, 61.6 cm.

Physical examination, made by Dr. Stevens.—Head: there is some asymmetry of the head; the right frontal region is flatter than the left; he drules continually; the eyes are negative; there are several carious teeth; there is pyorrhea alveolaris; the right tonsil is considerably enlarged. Chest: he is pigeon-breasted; the thyroid gland is enlarged on the right side; the heart

and lungs are negative. Abdomen: the abdomen is negative. Genitalia: there is a phimosis. Reflexes: the reflexes are negative. Glands: both epitroclear glands are enlarged. Skin: there are scars in the gluteal region on both sides. (Note: There are enlargements at the distal extremities of the radius.)

Recommendations.—This boy is an imbecile. He should be sent to the state school at Faribault. He has suffered from rickets, which perhaps accounts for his mental condition. Tonsillectomy and circumcision should be made.

T. R. Age, 11; Binet-Simon age, $6\frac{4}{5}$; point-scale age, 6+.

Measurements.—Weight, 36.9 kg.; height standing, 138.5 cm.; height sitting, 7.6 cm.; spirometer, 130 cubic inches.

Physical examination, made by Dr. Stevens.—Head: there is nystagmus of the eyes; the tonsils are markedly enlarged on both sides; the child is a mouth-breather. Chest: there is slight enlargement of the right lobe of the thyroid gland; the heart is negative; there are rales in the upper lobe of the left lung. Abdomen: there is some tenderness over McBurney's point and over the sigmoid. Genitalia: there is a partial phimosis; the right testis is not in the scrotum. Reflexes: the reflexes are negative except for the fact that the cremasteric reflex is absent on the right side. Co-ordination: there is a marked tremor of the eyelids; the Romberg sign is positive. Skin: there is a seborrhoic dermatitis.

Recommendations.—This boy should be placed in a subnormal classroom. His case requires special educational training. There are several physical defects mentioned above, which should be corrected. The tonsils and adenoids should be removed. The right testis should be brought down into the scrotum. Correction of these physical defects may have an important influence on his future development.

C. R. Age, 8; Binet-Simon age, $7\frac{2}{5}$; point-scale age, 7.

Measurements.—Weight, 34.6 kg.; height standing, 129.5 cm.; height sitting, 68.2 cm.; spirometer, 86 cubic inches; grip, right, 42; left, 31.

Physical examination, made by Dr. Stevens.—Head: The eyes are negative; there are three carious teeth; the right tonsil is considerably enlarged. Chest: there is a deformity of the chest, known as Harrison's groove; the heart is negative; there are pathological sounds, known as rales, in the apex of the right lung. Abdomen: the abdomen is negative. Genitalia: there is a partial phimosis. Glands: the axillary glands on the right side are enlarged and hard; the anterior cervical glands on the left side are enlarged. Reflexes: the reflexes are negative. Co-ordination: there is a twitching of the facial nerves on the left side.

Recommendations.—This boy is not sufficiently retarded to be placed in a subnormal classroom. His mentality is such that he should be able to do first-grade work easily. His physical condition is defective in several particulars. The tonsils should be removed and the carious teeth should be filled.

The partial phimosis calls for circumcision. The enlargement of the glands in the right armpit and the rales of the right lung are suggestive of tuberculosis. He should be carefully watched and, if possible, an X-ray picture should be made of his chest. This boy requires careful medical attention.

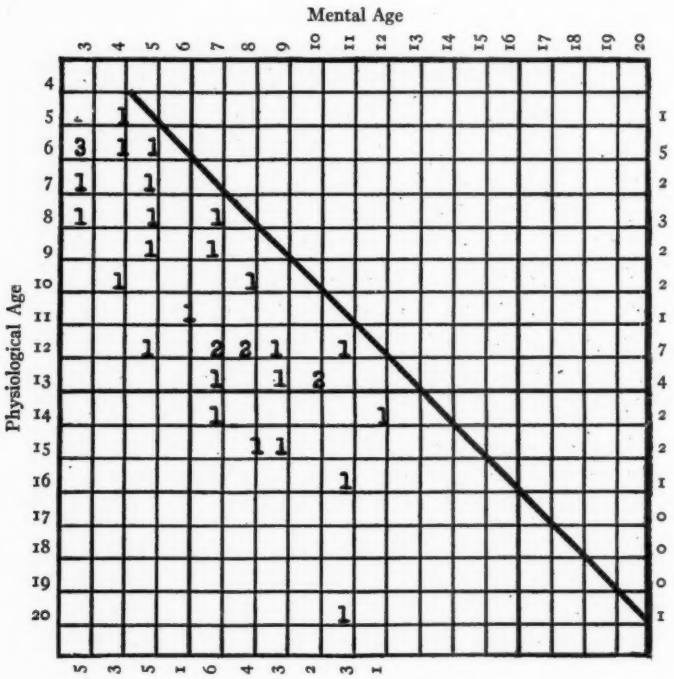

CHART 1.—Showing the correlation between the physiological and mental ages of thirty-three school children.

The correlation between the physiological and mental ages of the group of thirty-three children is shown in the accompanying table. The heavy diagonal line is drawn at the intersections of the lines representing the physiological and mental ages. The degree of retardation in each case is shown by the distance between the diagonal line and any particular case. The numbers at the right of the chart show the physiological ages of the group, while

the numbers at the bottom of the chart show the mental ages of the group. The figures in the chart indicate the number of children, with corresponding physiological and mental ages.

Inasmuch as it is impossible to publish the detailed findings in each case, a summary of the recommendations and the mental ages of all the children examined is given in the following table:

Case	Age	Mental Age	Recommendations
L. A.....	13	10	Removal of adenoids. Special work in present grade
A. B.....	8	5+	Subnormal classroom. Removal of adenoids
H. C.....	6	5	Speech training in first grade
E. C.....	12	9	Operation for undescended testicle
M. C.....	6	Imbecile	State School for Feebleminded at Faribault
B. C.....	6	3	Removal of adenoids. Subnormal classroom
J. C.....	12	11	Wassermann test. Work in fifth grade
M. C.....	13	9+	Wassermann test. Antisyphilitic treatment. Subnormal classroom
M. D.....	14	12	Continuation of present grade with social methods of stimulating his interest
M. D.....	16	11	Special work in domestic science
J. D.....	8	Imbecile	State School for Feebleminded at Faribault
S. D.....	12	8+	Subnormal classroom. Removal of adenoids
E. E.....	12	8	Operation for undescended testicle. Subnormal classroom
A. F.....	15	8	Subnormal classroom. Domestic science
R. J.....	15	9	Circumcision. Subnormal classroom
E. J.....	10	4+	Subnormal classroom
J. J.....	12	5	Subnormal classroom
S. K.....	14	7+	Subnormal classroom. Domestic science
R. K.....	6	Imbecile	Circumcision. Tonsillectomy. State School for Feebleminded at Faribault
R. L.....	12	7	Subnormal classroom
R. L.....	10	8	Present grade
E. M.....	12	7	Subnormal classroom
C. M.....	5½	4+	Treatment for chorea. Continuation in present grade
T. O.....	13	10+	Removal of adenoids. Circumcision. Continuation in present grade
F. O.....	7	Imbecile	State School for Feebleminded at Faribault
M. P.....	7	5+	Subnormal classroom. Tonsillectomy
R. P.....	9	5+	Subnormal classroom. Nutrition should be improved
T. R.....	11	6+	Subnormal classroom. Operation for undescended testis
M. R.....	6	4+	Correction of strabismus. Special speech training. Continuation in present grade
C. R.....	8	7	Continuation in first grade work. Tonsillectomy and circumcision. Continued observation for tuberculosis
P. S.....	13	7	Subnormal classroom. Manual training
A. T.....	9	7	Subnormal classroom
E. V.....	20	11	Manual training

A PROPOSED DEPARTURE IN THE METHOD OF DEFINING UNIT COURSES FOR SECONDARY SCHOOLS

At the recent annual meeting of the North Central Association of Colleges and Secondary Schools, one of its committees, that on the Reorganization of the Secondary School and the Definition of the Unit,[1] submitted in print a report in two parts, the second of which dealt with the definition of units. On account of a lack of time for discussion this report was referred for recommendation for action at the next meeting of the Association to a Commission on Units and Curricula provided for in a newly effected revision of the constitution of the Association. As this report will therefore come to the attention of the Association again, and because it constitutes a rather radical departure from usual methods of definition-making, it is deemed worth while to present a part of it in the columns of this journal. On account of the extent of the report only excerpts can be quoted. Those sections that have been selected for reproduction here are the preliminary statement, which sets forth the grounds for making the departure, as well as certain important general considerations, and, as illustrations of the sort of definitions proposed, the definitions in Latin and history. Those in English, Greek, modern languages, mathematics, science, civics, economics, manual training and mechanical drawing, home economics and household art, commercial subjects, normal-training subjects, art, music, and public speaking are omitted.

[1] The membership of this committee was as follows: George N. Carman, *Chairman*, Lewis Institute, Chicago Ill.; Frederick L. Bliss, High School, Jackson, Mich.; Henry E. Brown, New Trier Township High School, Kenilworth, Ill.; Benjamin F. Buck, Senn High School, Chicago, Ill.; George Buck, Shortridge High School, Indianapolis, Ind.; Otis W. Caldwell, University of Chicago; Chester B. Curtis, Central High School, St. Louis, Mo.; Calvin O. Davis, University of Michigan; Joseph D. Elliff, University of Missouri; Edward L. Harris, Public Schools, Cleveland, Ohio; Thomas F. Holgate, Northwestern University; Charles H. Johnston, University of Illinois; Charles H. Judd, University of Chicago; Frank E. Spaulding, Public Schools, Minneapolis, Minn.; Leonard V. Koos, Secretary, Chicago, Ill.

It is to be noted that the statements dealing with the subjects follow a definite order: (*a*) extent of offering, (*b*) distinctions between elementary and advanced courses, (*c*) methods, (*d*) correlation, (*e*) aims, (*f*) recommendations, and (*g*) questions for later decision. All parts of these statements except that last named may be understood to be included in the definition.

As the report in large part aims to furnish its own justification, no comment will be made here further than that the definitions as framed follow in general the facts of practice reported by a total of 1,570 teachers in 416 of the 1,047 secondary schools on the accredited lists of the Association during the school year 1915–16.

The Definition of Units

The definition of high-school units formulated by the North Central Association and other standardizing bodies have usually taken the form of syllabi of the subjects under discussion. As time has gone on, these syllabi have grown more and more comprehensive until now the definition often includes more topics than can be covered in any single course. The result is that there are many courses accepted as satisfactory to the standardizing body, all differing in details and all within the syllabus.

Furthermore, administrative problems have increased in number and complexity until there has arisen urgent need for a definition of each unit which will deal with the methods of administering courses as well as with the topics covered. For example, we must inquire, whether, under the present-day elective system, a student should be allowed to take first-year German in his senior year, or to take elementary algebra after the first year. Furthermore, we are driven to inquire, in allotting time on the program, whether the present arrangement under which a laboratory course is assigned double time is equitable in view of the actual amount of outside study which students devote to courses which recite in a single period. The whole movement in the direction of more supervised study is an example of the kind of administrative readjustment which proves that high-school teachers are realizing that a unit cannot be fully defined in a syllabus. A unit is standard when the work of the students is standard, not merely when the definition of the unit includes a certain list of topics.

The use of the term "unit" has become increasingly loose in recent years because of the difficulty of finding common characteristics in the different courses. Undue emphasis has been given to those superficial quantitative aspects of courses which can easily be made uniform. For example, all courses have been made exactly alike in the length of their periods and in the numbers of periods required in a year.

It requires little consideration to see that this rigid time requirement is working, in some cases, to the disadvantage of education. In the first place, while the recitation period is made uniform, outside study is left to the accidents of the elective system, and the choice of the individual student. The lack of attention to such matters appears in the fact that while one of the older definitions described a unit as one-fourth of a year's work, some schools are now allowing students to take six units and the general average is approaching five. This means that outside work for each unit is a vanishing quantity. In the second place, undue emphasis on superficial uniformity appears in the fact that small advanced classes are compelled, under the present formula, to adopt exactly the same organization as large elementary classes. In the effort to set up a rigid standard the essential spirit of inner equality has often been lost.

The Committee offers the following formulations, not as a final solution of all the problems to which attention has been called, but rather as a program in which the emphasis is shifted somewhat to a series of considerations not heretofore given sufficient emphasis. It recommends that this program be put into the hands of the inspectors with the authorization of the Association to work out the problems of individual schools and report back each year to the Association the desirable enlargement or abridgments of the formulations. Thus, by way of example, it will be explicitly recommended that inspectors be allowed in their discretion to permit schools to organize small advanced courses on a schedule of hours shorter than that prescribed in the standard for a unit of credit, provided that every such case is listed and reported to the Association at its annual meeting. If this type of recommendation is adopted, the experience of the inspectors in carrying out the program of the Association will be available at each meeting as a basis for the revision of the standards and definitions.

The foregoing paragraphs will make clear the reasons for the procedure adopted by the Committee. Instead of attempting to call together subcommittees of specialists, the Committee determined to base all its recommendations on investigations of the practices of schools on the approved list of the Association. To this end, it organized an office which was supported by subscriptions from the various institutions within the Association and sent out series of questions relating to each subject of instruction. These questions were sent to members of the faculties of approved high schools, who had been designated by the principals as especially interested in standardizing subjects. The answers were then brought together and submitted in full to the general committee.

The results of this inquiry confirmed the attitude of the Committee in the belief that the method of defining units by syllabi alone is inadequate for the purposes of the Association. There is such a variety in the practices of the different schools in the Association in every subject, especially in the newer subjects of the curriculum, that any enumeration of the topics which are taken

up in the various schools makes it evident that the courses of study accepted by the Association cannot be reduced to anything like uniform content.

It is not intended to abandon entirely the preparation of syllabi. If the general program recommended in this report is adopted by the Association, it will be advantageous for the specialists in the various fields, either in their special associations or under the supervision of this Association, to work over the syllabi of their subjects. In that case, we recommend that the syllabi take on the form of various alternative possibilities rather than the form of omnibus descriptions. There are evidently now many different courses in each subject, all of which are accepted. If the specialists would recognize the impossibility of agreeing on the details of a single program, but would at the same time organize their materials into several workable lists of topics, each one of which lists would be adequate as a unit, then the function of this general Association would be to approve several units, not on the ground of content, but rather on the ground of their conformity to broad, general administrative requirements which justify the treatment of one course as measurably comparable to other courses in the demand made on the student and in the training given by a year's work.

Attention is drawn in this connection to the dominating importance of textbooks in the actual determination of school practice. Textbooks illustrate the points made above. They are many and various in detail, but all capable of use in administering units of work to students.

The Committee further draws attention to the fact that a standard school and a standard curriculum for a student cannot be defined merely by piling together in irregular fashion a number of units, however carefully each one is defined from within. For example, if a school offers only two units of Latin, only two in science, and only two in history, is it a standard school? In like manner, it may be asked whether a student's curriculum which is made up of one year of Latin, one year of German, and one year of Spanish is acceptable, even supposing each unit is properly organized within itself.

Such considerations as these have led the Committee to prepare for the Association statements regarding each high-school subject, which statements are offered as working definitions of units. These statements are first of all based on present practice; they set forth the way in which subjects are now taught in approved schools. They are arranged so as to emphasize administrative characteristics. In many cases these administrative characteristics are not fully worked out, hence certain detailed recommendations are appended to the particular statements.

In general, definitions which apply to all units and the broad principles which it is recommended that the Association adopt as guides for future refinement of each particular definition are submitted as follows:

A unit is a series of recitations or exercises in a given subject pursued continuously throughout the school year.

The school year must be at least thirty-six weeks in length, each week to be made up of five school days. In computing the number of weeks and days,

single holidays may be disregarded, but not suspensions of school, which involve the loss of three days in a week.

The number of class exercises required in a week for each unit shall, in general, be five. Inspectors are authorized to accept a smaller number of exercises per week in cases in which the advanced character of the work or the small size of the class insures a direct, personal supervision of each student equivalent to that secured in an ordinary course. Each class thus accepted shall be reported at the annual meeting of the Association in a list setting forth the name of the school and the title of the course.

Class periods may not fall below 40 minutes in the clear, except in cases of the type mentioned in the foregoing paragraph. In case exceptions to this rule are tried, each exception shall be reported to the Association.

It is recommended that longer periods be provided for purposes of supervised study.

A standard unit should provide for individual work on the part of the student to such an extent that elementary courses shall involve, including the recitation, at least an hour and a half for the average members of the class. Advanced courses shall require a longer period of individual work.

Shop and laboratory courses should be recognized as made up very largely of individual work; hence the present rule should be adhered to of requiring double periods for such courses unless provision is made in these courses for outside work on the part of the student.

Fractional courses may be accepted; but in all cases where fractional courses are administered, credit for each such course shall be recorded separately. Fractional courses running through a period of years shall not be recorded with an aggregate of credit at the end of the whole period.

It is recommended that each definition include provision for students of varying ability. There should be a margin of extra work which the better students of the class may take. Furthermore, it is recommended that special requirements be imposed upon students who elect in the later years of their high-school career courses which are classified as first- or second-year courses. Such mature students taking elementary courses should be required to carry on a larger quantity of work at a higher level than the students of the earlier classes who take the same course. In general, the administration of this principle will be facilitated if advanced students are grouped in sections separate from elementary students. If this cannot be done for every day in the week, it is recommended that the advanced and elementary students be separated for a certain number of exercises each week.

It is recommended that the Association adopt the following statements emphasizing the importance of sequential organization:

No unit is well organized unless it explicitly articulates with courses pursued by the student in earlier years.

No unit is well organized unless it explicitly trains the student to carry forward the same type of thinking and practice, either in more advanced school

work or in some form of individual activity, either of an artistic or productive type.

A statement of the relations of each unit to other phases of school work and practical life should be included in all descriptions of courses so that students may elect courses with intelligent regard to these matters.

It is recommended that the Association adopt the following statement requiring a definition of progress within a unit:

No unit is well organized unless there is some clear definition of more mature types of thought or action to which the student attains in his progress through the course. A mere enumeration of topics does not constitute a definition of progression within a course.

It is recommended that the Association adopt the following principle requiring advanced courses of every student:

At least two-thirds of the courses pursued by each student in the last two years of his high-school curriculum shall be of a type which is explicitly definable as advanced. In order to make the enforcement of this rule possible, each definition of a unit should ultimately include a discriminating discussion of the advanced or elementary character of the work which it defines.

It is recommended that the Association adopt the following statement regarding the range of work offered by a standard school:

In order that a school may rank as a standard school of the first class, it must provide and conduct courses in English, history and civics, science, mathematics, languages other than English, and the fine and practical arts.

It is further recommended that the Association instruct the inspectors to make a report at a subsequent meeting defining the number of courses in each of these fields which shall constitute the minimum acceptable to the Association. At the same time there should be a definition of the range of courses necessary to make up a satisfactory curriculum for the individual student.

It is recommended that the Association instruct the inspectors to investigate the number of units taken by students in one year and to report at a subsequent meeting proper regulations governing this matter.

It is recommended that the Association instruct the inspectors to inquire into the feasibility of giving different credits to high-grade students and low-grade students in the same class.

LATIN

EXTENT OF OFFERING

The course in Latin, with very few exceptions, extends through four years in the schools reporting. The work reported in the four years is first-year Latin, Caesar, Cicero, and Virgil.

A few schools offer work in Latin in the upper grades of the elementary school, but there seems to be no standardization of practice as to credit granted on a high-school basis for such work.

More than half the schools grant credit toward graduation for a single year of Latin.

A number of schools permit students in the later years of the high school to take the earlier courses in the same divisions with students in the earlier years of the high school without imposing additional qualitative and quantitative requirements.

DISTINCTION BETWEEN ELEMENTARY AND ADVANCED COURSES

The only distinction appearing between elementary and advanced courses in Latin seems to be in content, and this is implied in the sequence as reported above.

METHODS

The teaching method in most schools is the grammar-translation method, although about 20 per cent of the schools are almost equally divided between the use of the direct and a combination of the direct and grammar-translation methods.

The following materials and devices are reported by the teachers: maps, charts, pictures, correlation with other subjects, contests, games, exhibits, perception cards, magazines, and stereopticons. In consideration of the fact that the literary subjects require much less in the way of equipment than do other lines of school work, it is not too much to say that such equipment as is included in this list of devices should be at the disposal of all teachers of Latin.

The time required for preparation of the daily assignment is modally 40–60 minutes for first year and 60–90 minutes in the last year. A small proportion of schools require less or more. Supervised study appears in a few schools, but for the most part the study and recitation are carried on under the old plan.

CORRELATION

As stated under aims (*f*), (*g*), and (*h*) below, there is some correlation of Latin with English, history, and literature. A number of teachers state specifically that work with English derivatives is one of the distinctive features of their courses.

AIMS

The aims as generally concurred in by the teachers of Latin are: (*a*) ability to read and understand Latin of the grade usually offered in the Freshman year in college; (*b*) ability to translate such Latin into English; (*c*) ability to write Latin of the grade usually required in the Freshman year in college; (*d*) a ready, accurate, and fairly complete working knowledge of Latin grammar; (*e*) an accurate and ready pronunciation; (*f*) a better understanding of English word meanings and the grammatical structure of the English language; (*g*) a fair knowledge of the history, manners, and customs of the Romans, and their influence on western civilization; (*d*) a fair knowledge of the mythology of the Greeks and Romans.

RECOMMENDATIONS

Because such a large proportion of schools are granting credit toward graduation for a single year of Latin, the Committee recommends that, if such credit is granted, the first-year Latin courses be so modified as to make the work of educational value without reference to subsequent courses in this language. An illustration of what is here meant is supplied by the increasing tendency to introduce work in English derivatives already mentioned above as being directly reported by a number of teachers, and also indirectly reported by the use of certain recent first-year Latin texts that emphasize this aspect of the subject.

QUESTION FOR LATER DECISION

The Committee wishes to open for discussion the question of the advisability at some later time of incorporating in the definition of the unit the requirement of the use of the direct or a combination of the direct and grammar-translation methods, in preference to the present almost exclusive use of the grammar-translation method.

HISTORY

EXTENT OF OFFERING

The following courses in history appear in the high schools reporting: general history, a 1-year course appearing in a very few schools; ancient history, 1 year; mediaeval and modern history, 1 year; English history, ½ or 1 year; and American, ½ or 1 year. These offerings are exclusive of the courses in civics and economics, concerning which statements are made later in this report.

A small proportion of schools also report courses in other divisions of the historical field, as Hebrew, Greek, and Roman.

The practice in almost two-thirds of the schools is the offering of three courses in history, most frequently ancient, mediaeval and modern, and American, but in some schools ancient, English, and American. Almost another third of the schools report four courses, viz., ancient, mediaeval and modern, English, and American. A small number of schools offer but two courses, and a single school offers one course.

We are given no reason to doubt that all this work is credited toward graduation from the high schools.

DISTINCTION BETWEEN ELEMENTARY AND ADVANCED COURSES

The element of chronological sequence seems to be the one marked distinction between elementary and advanced courses. For example, ancient history appears in the first or second year; mediaeval and modern in the second or third year; English in second or third, but more commonly in third; and American almost universally in fourth.

The mastery of the text is a somewhat more commonly recognized aim in ancient than in subsequent history courses, and this is so probably on account of the difference in the maturity of the student.

Corresponding to the fact that the mastery of the text is a somewhat more common aim in ancient history than in subsequent courses, is the further fact that more of the teachers of the former than of the latter report the use of the text as the main body of the course with little or no collateral reading, and not so often as a basis of assignments to be supplemented by required collateral reading.

In accordance with what we are led to expect from the foregoing, the amount of collateral reading varies with the maturity of the student or the place in the sequence of the courses, i.e., the usual amount required is greater for the later than it is for the earlier courses.

METHODS

The method of the use of the text has already been reported.

The kinds of collateral reading are as follows: other texts, more extended works, source material, biography, historical fiction, poetry, magazines, and newspapers. Other texts are used more in ancient history than in the more advanced courses. More extended works are used more in the later courses than in ancient history. The same may be said of source material, biography, and periodicals, the last named probably because of the contemporaneous nature of the material.

Collateral reading is tested by one or more of the following methods: reports in class, discussion in class, note-books, themes or other written reports, and examinations or tests.

Courses in American history contain varying amounts of work in government.

CORRELATION

Correlation of history is effected with English composition, English literature, geography, civics, political economy, Latin, current events, sciences, art and architecture, drawing, spelling, and penmanship. The extent of correlation seems to be greatest in current events and geography. It is especially high for American history with civics and economics. The correlation with art and architecture is highest in the earlier courses. With English composition, spelling, and penmanship it is fairly common throughout, while with English literature it is not high except for English history. The amount of correlation with Latin, the sciences, and drawing is not notable except that ancient history is correlated with some frequency with the subject first named.

Correlation is also implied in aims (*h*), (*i*), and (*j*), below.

American history is, of course, correlated with government in practically all schools.

AIMS

The aims concurred in by teachers of history are: (*a*) to master the text; (*b*) to cultivate the power of handling facts; (*c*) to develop the spirit of nationalism; (*d*) to cultivate "reconstructive imagination"; (*e*) to equip the student with a store of historical information; (*f*) to develop the "faculty of discrimi-

nation"; (*g*) to promote good citizenship; (*h*) to develop ability in speech, oral and written; (*i*) to inspire with a love of reading; (*j*) to teach the use of books. As has already been stated, the mastery of the text is more generally recognized as an aim in ancient history than in the later courses. Aim (*c*) is more prevalently recognized in American history than in others. Aim (*g*) is high in all, but highest in American history. Aims (*e*), (*f*), (*g*), (*h*), and (*j*) are more generally concurred in than are other aims.

RECOMMENDATIONS

The Committee does not believe that mere chronological sequence of topics is a characteristic sufficient to distinguish elementary from advanced courses. It therefore recommends that in the later courses the text should not be used as the main body of the course with little or no collateral reading, but that it be used instead as a basis of assignments to be supplemented by required collateral readings, or as an outline or syllabus in connection with collateral readings. This implies that there should be a greater amount of collateral reading in the more advanced courses, and that this collateral reading should be less limited to the reading of other texts than may be suitable for the earlier courses in history. This collateral reading may well be devoted to a greater degree to more extended works, source material, etc.

QUESTION FOR LATER DECISION

Because in practice relatively few students elect a full sequence in history, the Committee directs the attention of the Association to the possible desirability of recommending reversion to the older practice in the high schools of offering courses in general history.

EDUCATIONAL NEWS AND EDITORIAL COMMENT

Summer Meeting of the National Educational Association

The annual meeting of the National Education Association will be held in New York City, July 3–9; the general sessions meeting will take place in Madison Square Garden. Headquarters hotels are the Hotel Astor for New York and New England; the Waldorf-Astoria for Pennsylvania, New Jersey, and the Southeastern states; the McAlpin for the Middle and Western states. Thirty-day reduced rates on most roads will be available. President Wilson, Commissioner Claxton, Professor John Dewey, Superintendent William A. Wirt, and other prominent men will address the general sessions.

Winter Meeting of the College Teachers of Education

The Society of College Teachers of Education, through the co-operation of Dr. George Melcher of Kansas City and Mr. Springer, secretary of the National Education Association, have completed arrangements for their meeting in connection with the superintendence section of the National Education Association at Kansas City next February. The meetings will be held in the St. Francis room of the Baltimore Hotel. The White Room adjoining will be used for the luncheons on Monday and Tuesday, thus continuing the luncheon feature which was so satisfactory in connection with the meetings of the society this year.

Purposes of the High-School Principals' Association

The secretary of the newly formed National Association of High-School Principals, F. M. Hammitt, of Mason City, Iowa, in response to a request from the *School Review*, has prepared a tentative statement of their primary purposes. Beginning with the declaration that "high-school principals know more about high schools than any other body of men in the educational world," Mr. Hammitt points out two evils from which high schools have suffered in the past. He deplores the tendency of colleges and universities, on the one hand, to make requirements without due consultation with secondary-school experts. He

expresses similar condemnation of the tendency of local school authorities to interfere with the appointment of teachers, and with other purely administrative functions, which undeniably ought to rest with the principals. To combat these tendencies, to voice an effective declaration of independence on the part of the principals, and to create among them a better spirit of co-operation are the primary purposes of the new organization. With laudable restraint, the secretary concludes:

> It is hoped that this association will develop the professional consciences on the part of high-school men. While the association is not antagonistic to any other body, organized or unorganized, it will attempt to bring about a situation that will necessitate the consulting of principals when any change is made that will affect the high school.

A Symposium on Speech, Voice, and Hygiene of the Vocal Tract

The committee on American Speech of the National Council of the Teachers of English has instituted a nation-wide campaign of publicity concerning the subjects of speech, voice, care of the throat, nose, lungs, and similar questions of hygiene. The commendable purpose is to arouse public opinion to the need of training the youth of the land in suitable speech habits. Among its three hundred members the committee includes prominent physicians, musicians, singers, actors, and educators.

A significant part of the campaign is the publication of a symposium on vocal hygiene and kindred topics, in the April number of the *Journal of Ophthalmology, Otology, and Laryngology*, of Lancaster, Pennsylvania. Among the more important articles are: "The Vocal Apparatus in Health and Disease," by George B. Rice, M.D., Professor of Laryngology, Boston University; "Voice Hygiene," by Joseph C. Beck, M.D., of the University of Illinois; "Operators' Voices: The Method of Their Cultivation," by John W. Bradshaw, of the Chicago Telephone Company.

A Unique Method of Motivating High-School Work

The American love of baseball has been turned into scholarship in the high school at Fort Dodge, Iowa. A competitive scheme of marking based on the national game is arousing much enthusiasm among the pupils and creating interest among educators. W. H. Blakely is principal of the school, and L. H. Minkel is superintendent of the schools of the city. There are over four hundred pupils in the school, all of them taking part in the new class rivalry.

The four classes represent ball teams, each recitation group standing for a player. A day's recitation corresponds to an inning, and the week constitutes a game. The average of the grades made by the different recitation groups stands for the batting averages of the individual players the groups are representing. The class whose recitation groups make the highest averages win the inning. A complete series of games between the four classes of the high-school league is in progress.

The work of figuring the averages and the standing of the teams and their members is left to the arithmetic classes of the commercial department. The bookkeeping classes keep the records and the typewriting classes publish the reports and scores. It is a truly comprehensive system.

One of the great results of the scheme is that the lazy pupils are driven on by their more ambitious classmates, because one low standing can draw the average of a recitation group below that of its competitor. It also rouses wholesome class rivalry in subjects other than athletics or debate. The faculty as well as the pupils are enthusiastic over the scheme.

Unit Poems

School principals and teachers of English have long been face to face with two apparently insuperable difficulties in teaching literature. First, it is well-nigh impossible to secure a suitable collection of poems in one volume. Second, little opportunity presents itself to place in the hands of pupils the worthy poetry which is being produced every month. Moreover, to place a volume of poems in the hands of an adolescent is likely at the very outset to create a nausea rather than a liking for poetry.

An interesting experiment, which bids fair to avoid these difficulties, is being undertaken by the Unit Press of Fitchburg, Massachusetts. Unit poems are being printed upon loose sheets, $5\frac{1}{2}$ by 8 inches in size, punched to admit of binding. Nearly four hundred poems, separated into primary, intermediate, and advanced lists are now available. They can be purchased at one cent each, with materially reduced rates for larger numbers. Schools which have used the unit sheets report the advantages obtained as follows: they provide a wide selection of what is best in verse and in prose; they economize the time of teacher and of pupils; they give to the pupil a schoolbook which he may keep; and they teach that poetry is a living art of today, as well as an accomplishment of the past.

Army-Drill Course for Chicago Schools

A unanimous vote of a subcommittee of the Chicago Board of Education recommended the following program of military drill for the high schools: for the first and second years, setting-up exercises, instruction in the school of the soldier, without arms, instruction in the elements which produce efficiency in military organization, instruction in the school of the squad, definition of all military terms used; third and fourth years, instruction in the school of the company, instruction in the school of the battalion, definition of military terms used, drills and exercises, military sports and athletics.

It will be noted that two lines of training are contemplated: group evolutions in the form of company and battalion drills, and military sports and exercises. Both are good in their way, and might do much to inculcate a spirit of co-operation and of obedience to discipline, indispensable qualities not only of soldiering, but of civic life in general. In the public hearing which preceded these recommendations one ridiculous argument was unceremoniously squelched. To the contention, "I doubt if it is right to teach unquestioned obedience . . . . in the most pliable time of a boy's life we should not teach immediate obedience to a superior, but initiative," one member of the committee vigorously replied, "I believe in obedience to law and in preparation for emergencies."

It is to be hoped that no city will undertake military drill without full realization that the essential element is thorough physical training. Any sensible man realizes the truth of the contention that general school gymnastics might be far more efficient in this respect than a scheme such as is prepared for the Chicago schools. In short, the bulletin of the North American Gymnastic Union probably speaks the truth:

> A young man who from childhood on has received the benefits of systematic physical training, developing vigor and agility, courage, self-reliance, self-control, and self-confidence in meeting the ordinary demands of ordinary times, will, in the hour of need, be a better soldier than the untrained clerk or merchant who, on the spur of the moment, no matter how patriotic the motive, decides to undergo a few weeks' military drill at Camp Plattsburg or Fort Sheridan.
>
> The North American Gymnastic Union, founded in Philadelphia in the year 1850, is the pioneer of physical training in this country. Its system, brought over by the refugees of the German revolution of 1848, has been enlarged, perfected, and adapted to American conditions, so that we may speak today of an American system of physical training. It prepares the youth for the daily struggle in life, during times of peace, by means of class work in

free exercises, exercising on apparatus, by games, athletics, and such activities as swimming and "hiking," all of which, though primarily intended to be helpful toward cheerful and peaceful living, are incidentally prerequisites for military training.

Military drill in the schools on paper is of no value. Military training in the schools, if carried on in a slipshod manner, is little better. It is wiser far to omit it entirely, than to allow the young men to dawdle through a few maneuvers, and to learn a few commands. The military companies of state universities, with their compulsory drill, do not always receive the faithful attention of the rank and file of the privates. Chicago, or any other city, would be foolish to inaugurate a system without provision for rigid discipline under leaders who are thoroughly capable. Moreover, the proposals as set down by the committee apparently fail to provide rifles, or to provide for strenuous camp life. Any serious preparation which pretends to prepare young men for war must teach them to shoot and to endure hardships. Probably not one eighteen-year-old boy in twenty-five in Chicago ever had a gun in his hands, or slept in a tent. Either go the limit or keep out entirely. Anything worth doing is worth doing well.

The Newark Experiment with All-Year Schools

City School Circular, No. 3, 1915–16, of the Bureau of Education sets forth the results of the experiment conducted for the past four years by Newark, New Jersey, in all-year schools. The plan was inaugurated to save two years in the elementary school, and in general to save the loss of energy involved in the long summer vacation. Especially significant is the fact that the schools selected were located in congested tenement districts where there is nothing for the children to do in summer but to fall into bad habits.

Results of the four years' experiment show that even though attendance in the summer is voluntary, no compulsion whatever being used, the average attendance is but 10 per cent lower than the average for the regular term. The testimony of one parent is typical of several cited: "If there were no summer schools we should not know where our children are. They would leave home early in the morning and run all over the city. Now we know that they are safe in the schoolhouse."

Though no exact statistics have been compiled to show how much time each pupil has gained, an investigation of the progress made by

271 pupils in the sixth, seventh, and eighth grades showed that 25 have made no gain, 67 a gain of one-third of a year, 59 a gain of two-thirds of a year, 67 a gain of one year, and 53 a gain of one and one-third years. Some of those who have gained less than one and one-third years have not attended the all-year schools long enough to gain this amount. For example, some of those who have gained only one-third of a year have attended only one summer term.

The medical inspectors of Newark report that, though no tests that might be classed as scientific have been made, the health of the children who have attended school all year has not been impaired in the slightest degree. A glance at the housing conditions in the tenement districts of any city should be enough to convince critics that the health of the child would be better conserved in the schoolroom than in the crowded tenement rooms and hot streets.

The regular school medical and nurse service continues in the summer, so that the health of the children in school is better cared for than that of those not in school. Good health habits acquired during the regular term are not broken up by a long summer vacation when the children not in school are beyond the influence of the school physician and the school nurse. The physician and nurse both report that the children who have been out of school during July and August come back in September in poorer physical condition than those who have attended during these two months, and that even the children who have been away to a summer resort are in no better physical condition than those who have been in school, since their recreation is likely to have been of a dissipating nature. One school physician stated that if the children could go into the country and live a normal life with plenty of exercise he would prefer this to keeping them in school; but since conditions are such that none of the children who are in the tenement districts can go to the country, the best place for them for four or five hours a day is in the schoolroom, on the school playgrounds, and in the school shops and gymnasiums.

It would seem that the all-year schools would be an additional expense, but the discovery has been made that instead of an expense they are proving an economy. The supervisor of the summer sessions of the all-year school says:

> Let us suppose that there are two schools each accommodating 3,000 children, one organized on the regular and one on the all-year plan. Let us suppose that all of these children will enter and complete high school. The elementary education of the 3,000 in the regular eight-year 320-week course

will cost, on a basis of 90 cents a week per pupil ($36 per annum), the immense sum of $864,000. The education of the 3,000 in the all-year, six-year 288-week course will cost, on the same basis, $777,600, a saving of $86,400, as compared with that of the regular school. An all-year high school would save, in educating these same pupils, the sum of $120,000 more. A study made last March of the educational progress made by the pupils of the two all-year schools which were first established shows that 283 pupils had been graduated who, under the regular plan, would have been still in school. Reckoning 40 pupils to the class, there would have been seven additional classes in the two buildings. This would have made necessary 14 half-day classes in these schools. As these pupils would have been in the upper grammar grades, the additional cost to the city under the old plan would have been at least $7,000 per annum.

BOOK REVIEWS

Socrates, Master of Life. By WILLIAM ELLERY LEONARD. Chicago: Open Court Publishing Co., 1915. Pp. 118. $1.00.

The interest of mankind in its heroes is perennial. That in particular the heroes of the spirit should claim and receive the attention of the thinking portion of the race in our time is a credit to be set against the debit created by the inestimable loss of spiritual values incident to the recrudescence of the beast in the present world-wide struggle for national existence. The year 1914 brought forth two ambitious studies of Socrates by Mayer and Busse; the following year gave us the little study here under review, first appearing in a journal, then in book form. The interest in Socrates at this particular time may be regarded as comic, as tragic, or as prophetic. Some will see in it an evidence that the scholar is sadly out of touch with a day pregnant with great events which are not dreamed of in any philosophy; others will discover in it an instance of the fair flower rudely plucked by a profaning world; others again may hold with me that the thoughts of the prophets interpret the inarticulate dreams of the slower-witted folk, who will one day realize that the seers beheld afar off. Surely the years beginning with 1914 will seem to succeeding ages a cry from the universal heart of man for a Socrates who shall shame the worldly ambitions of the strong and teach men the true values of life, patriotism, courage, simplicity, contentment with few material goods, and an indefeasible hostility to all shams and to the social injustice which springs from adherence to ideals unworthy of the high estate and destiny of man.

Compared with the studies of Busse and Mayer, Professor Leonard's book is slight in compass. It is not a monument of learning, bearing on its face the evidence of wide reading and deep research. It was not intended to be so regarded, though the competent reader will detect in it, as in some of Pater's essays, the fruits of ample study and reflection. It is essentially an essay, and, judged by the canons of its literary kind, it is thoroughly admirable. Indeed, I do not know where one would find in English a more sane and thoughtful essay on its great subject than this. Its only rival is the article by Henry Jackson in the *Encyclopaedia Britannica.* I for one most cordially welcome Professor Leonard's booklet; for I have waited for years for just such a treatment of Socrates, to which I might with confidence refer my students.

By this hearty commendation I do not wish to imply that I agree altogether with our author's methods or conclusions. So far as the biographical sketch is concerned, it is well done, and the conclusions are based on a sound feeling and tact in dealing with sources. Our author has shown by his translation of *Empedocles* that he has an adequate command of Greek, and the literary

taste of that work as well as the present commands the scholar's confidence and admiration. But it is somewhat disconcerting to find him praising the method of so unsound a critic as Professor Taylor in his *Varia Socratica*, and the almost exclusive use of Xenophon and Aristotle as authorities for the thought of Socrates foredooms his essay to failure in the effort fully to appraise the scope and bearings of the great teacher's message. What Socrates said is of secondary importance; the thoughts which his intellectual midwifery brought to the birth in the circle of his friends are all-important. And who, among those devoted followers, will venture to ignore the greatest of his disciples, Plato? To be sure, to mention Plato is to raise a perfect swarm of unanswered questions; but every writer on Socrates must face and answer them, especially if he accepts Plato's *Apology* as a tolerably authentic document, as our author does. For Plato alludes in almost innumerable passages in his dialogues to the trial and defense of Socrates, and these passages present a strikingly harmonious interpretation of the event and its causes. Their agreement with one another and with the *Apology* renders a middle course regarding the latter untenable; and I for one prefer to trust the insight of a Plato rather than the bonhomie of that prototype of the good-hearted country squire, Xenophon. As for Aristotle, he is concerned only with Socrates' contribution to "philosophy." The tradition of the Academy could yield him that; for the rest, the attitude moral and social reformer, Plato, and the cynics, Crates and Hipparchia, who went, like Salvation Army captains, from door to door inquiring into the state of the inmates' souls, seems to me to be more in agreement with the spirit of Plato's *Apology* than the dull utilitarianism of Xenophon.

W. A. HEIDEL

WESLEYAN UNIVERSITY

High School and Class Management. By HORACE A. HOLLISTER. New York: D. C. Heath & Co., 1915. Pp. 314.

High School and Class Management is the most complete treatise on the subject that it has been my pleasure to read. Very much unlike many efforts of the kind, it contains matter of real interest for the teacher, principal, superintendent, school-board member, and even for the teachers' agency. The style is simple and interesting, the subject-matter vital, and the presentation clear and concise.

The work is divided into three general parts. The first shows the evolution of the high school, and gives a brief history of the development of its function, together with a suggestive outline of factors which the author believes will be prominent in bringing about further development and gives the high school a wider scope of usefulness in the community.

The second part consists of a very comprehensive discussion of the general management of the modern high school. Its chapters should prove interesting reading to every superintendent, principal, and teacher whose narrowness of

vision has prevented his seeing the relationship of the parts to the whole, and of the whole to the community. If more of us who are wrestling with school questions could rise to the vantage-point of the author, so that our view could be as broad and vivid as is his, the petty problems that we now stumble over would become stepping-stones to more genuine progress. In the chapter on "Government of the High School" he sounds the fundamental tone, and anyone who can grasp this note is in a fair way to become harmonious with the whole. Problems of discipline will decrease in magnitude, problems of the classroom will become easy problems, the daily work will be less burdensome, health will be preserved, teachers will be more efficient, and salaries will be higher when we can attend to the minutiae without losing sight of the greatness of the institution and of the purpose of its existence, as depicted by him. Indeed, the other chapters of this part, including the chapters on organization of the school, the employment of teachers, the readjustment of administration units, the advisory functions of the school, the informal life of the school, the daily program, and the school attendance and records abound in food for thought for teachers and laymen, as well as school executives and supervisors.

Part three deals with class management and the technique of teaching, and in itself justifies the indorsement of the work. There are excellent chapters on class management and the technique of teaching, the teaching of English, the teaching of foreign languages, the teaching of mathematics, the teaching of history, and the teaching of science, each elaborated by means of copious notes. Throughout the book the author has drawn on his wide experience in a way to please the most fastidious.

B. E. McCormick

La Crosse, Wis.

The Essentials of Agriculture. By A. E. Waters. Boston: Ginn & Co., 1915. Pp. 450. $1.25.

This is an attractive volume of 450 pages which are supplemented by 260 fine, well-selected illustrations. At the end of each chapter there is a set of questions designed to stimulate thought. The author deserves special credit for the carefully prepared exercises which follow many of the chapters. They are of such nature that the material and equipment may be easily obtained.

One of the objections to any text in agriculture is that many subjects are treated, but that none of them are thoroughly treated. For this reason it would be better if chap. xxvi, which deals with insects, were embodied in the other chapters. For example, if we are dealing with the subject of corn, as in chap. xiii, the insects which are injurious to corn, and measures for controlling these insects, should be included in this particular chapter. What I have said of chap. xxvi is also true of chaps. xxv and xxvii, which deal with plant diseases and sprays.

In conclusion, I may say that this text is well balanced and excellent in its general make-up. It is the best text for elementary agriculture which I have examined, and we are placing it in our Normal School at Platteville, Wisconsin.

L. V. STARKEY

STATE NORMAL SCHOOL
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The Psychology of the Common Branches. By FRANK NUGENT FREEMAN. New York: Houghton Mifflin Co., 1916. Pp. xii+275. $1.25.

The shifting of emphasis in educational literature from the art of teaching to the art of learning is reflected well in Freeman's admirable *Psychology of the Common Branches.* It is at once a treatise on general educational psychology, on the special educational psychology of school subjects, and on special methods. As an introduction to educational psychology it discusses in successive chapters various types of learning: sensorimotor learning, illustrated by handwriting; perceptual learning, illustrated by drawing, reading, and music; associative learning, illustrated by spelling; imaginative learning, illustrated by history and geography; learning by analysis and abstraction, illustrated by mathematics; the formation of general ideas or concepts, illustrated by natural science. As a special educational psychology of school subjects the book reviews many of the important facts that have been established by experiment, but not as fully as the author's interest in and devotion to experimental methods would have led us to expect. As a treatise on special methods the book abounds in valuable and judicious recommendations for teaching school subjects, especially in their early stages.

To combine these three phases must necessarily in the present state of knowledge lead to unevenness and to varying degrees of emphasis on each. In general, the first and the third phases are most fully treated. Thus, the chapter on drawing is largely a discussion of the general psychology of perception and recognition, and the value of sense-training in general. Much of it relates very indirectly to drawing, and in the meantime many of the special psychological problems of drawing are not touched. Similarly, the chapter on history is a good discussion of the imagination, but there is but little of it that could be called the special psychology of history. All of the chapters, except that on writing, in which the author has made many valuable studies, illustrate more or less this emphasis on general psychology. It is, of course, true that in such a subject as history there is little or nothing in the way of special psychology to offer; but on the other hand there is considerably more in reading, drawing, and spelling than one not familiar with the field is likely to suppose from the reading of this book. To the reviewer it seems that there would have been a great gain if the three phases, the general psychology of the different types of learning, the special psychology for each subject, and the pedagogical recommendations, were more sharply set off from one another. The inter-

mingling of the general and special psychology and pedagogy makes the formulation of unsolved problems more difficult, and is less likely to encourage the investigation and experimentation for which the author in his preface pleads. Psychology as a science deals with facts and laws rather than with rules of procedure and method. Freeman's book bulks large on the side of method, which makes it useful for teachers of elementary subjects, but less valuable to his brethren in the field of educational psychology.

The educational psychologist, however, welcomes it, coming as it does at a time when so many investigators are engaged in the construction and administration of standard tests and measuring scales in school subjects. The correction of defects which tests and scales may disclose requires a close analysis of learning processes. When a teacher asks why her pupils do badly and what she is to do about it, she will find much that is suggestive in this book. The style is clear, non-technical, and withal scientific. It will doubtless be widely read and used, and deservedly so.

V. A. C. HENMON

UNIVERSITY OF WISCONSIN

The Natural Method of Voice Production. By FLOYD S. MUCKEY. New York: Scribner, 1916.

Students and teachers of singing are greatly indebted to Dr. Floyd S. Muckey for his book on the natural method of voice production. He explains in clear, simple English the fundamentals of good singing. With the aid of Professor William Hallock, of Columbia, an investigation of the voice mechanism, the functions of the various parts of the mechanism, and the laws regulating its action was made. According to Dr. Muckey, the underlying factors in the natural method of voice production are: (1) the non-interference of the action of the vocal cords, and (2) the full use of the resonance chambers. Interference is defined as any muscular contraction which prevents unhampered vibration of the vocal cords, free motion of the cartilages and muscles of the larynx, or full use of the resonance chambers.

All teachers agree that the removal of interference is essential to good singing; but there is difference of opinion as to how this is accomplished. It is most encouraging to find that Dr. Muckey upholds those who strive to secure the removal of interference by singing soft, short tones with the vowel *ee*. Those who have tried the old method of removing interference by relaxing the throat, the tongue, the palate, and by lowering the jaw, will find that the natural method secures desired results in less time and with a great deal less strain on the vocal cords. The lowered jaw is a very unnatural position; it may for a short time secure a freer tone, but in the end the result is a weakening of the vocal cords and the return of interference.

According to *The Natural Method of Voice Production*, voice development should begin with humming, with the jaws and lips closed. This makes use

of the resonance chambers, and the habit of placing the tone properly is formed. The interference is removed by first singing that vowel sound at which the position of the throat is least disturbed. The vowel *ee* is chosen because the pronunciation requires little moving of the jaw. This vowel is later combined with such consonants as *l*, *b*, *m*, and *g*, which also require little use of the jaw and much use of the lips and tongue. The thought of the singer is concentrated on the use of the tongue and lips as a means of removing interference, not on the relaxed position of the throat and the lowered jaw. The vocal cords are involuntary muscles and will therefore take care of themselves if let alone; but as soon as one tries to make them do something the involuntary muscles are affected and as a result interference sets in.

Dr. Muckey emphasizes the use of the resonance chambers. The natural method eliminates the value of the breath as a sustainer of tone and makes it an insignificant factor in voice production. This method then excludes two elements of singing which unquestionably mar the effect on the audience: labored breathing, and the ugly position of a lowered jaw and a very wide-open mouth.

This book if widely circulated will exert a powerful influence on the various methods of teaching singing now used. *The Natural Method of Voice Production* should be in the library of every student and teacher of voice.

The Industrial and Commercial Schools of the United States and Germany. A Comparative Study. By FREDERICK WILLIAM ROMAN. New York: Putnam, 1915. Pp. vi+382.

There would seem to be nothing to prevent the English reader from gaining a reasonably complete understanding of the educational system of Germany as it stood before the great war. Professor Roman's book is a distinct and valuable addition to the available literature of that subject. The book, therefore, will be read with interest and gladly received into a place in the library of the student and the general reader beside Dean Russell's *German Higher Schools*, Paulsen's *German Education*, Farrington's *Commercial Education in Germany*, Bolton's *Secondary-School System of Germany*, Klemm's *Public Education in Germany and in the United States*, Winch's *Notes on German Schools*, and Kandel's *Training of Elementary-School Teachers in Germany*.

The volume now under review makes it clear that, upon the whole, the organization of industrial and commercial education in Germany suggests contrasts rather than resemblances, when brought into comparison with the situation in the United States. This is seen in the fundamental attitude of the two countries in reference to education in general. Germany apparently rests her whole educational scheme upon the proposition that it is important to find out early "what a lad is to do, and to train him specifically for that line of work and for no other." At every level at which it is permitted pupils to leave the

general school, opportunity is provided whereby they may enter upon a course of distinctly commercial or industrial education. These points of departure are: (1) at the completion of the eight-year elementary school; (2) at the end of the sixth year in a secondary school; (3) at the end of the ninth year of the secondary school. In almost the whole of the German Empire school attendance is compulsory from six to fourteen years of age. Up to this time the pupil has received no vocational training whatever. The eight years of the elementary school represent in the German view the irreducible minimum of general education which the state insists upon for every child. But when the boy completes his elementary-school course, at fourteen, he may find a position with a business or industrial concern. Here he spends a part of every week at work. The other portion of the week he devotes to attendance at a continuation school. In twelve of the twenty-six states of the empire such school attendance is required from fourteen to eighteen years of age, unless the boy is attending some other educational institution.

As a prerequisite for the pursuit of such industrial or commercial training as the continuation school affords, the German elementary school is held to be distinctly superior to the American "with reference to the time spent in school, the grade at which the pupils leave school and the thoroughness with which the subject matter is mastered, the goal of the school itself, and its organization and teaching staff."

Professor Roman traces the history of the continuation school from its origin in the Sunday schools in 1589, because of the view of the church that the moral and religious welfare of the state demanded that it supplement the insufficient influence of the home, to its present expansion to every part of the empire, as an agency for promoting the industrial and commercial supremacy of Germany. Matters of internal organization, types of curricula, sources of support, regulations regarding attendance, and the system of governmental control are explained in detail. A separate chapter is devoted to an account of the continuation schools for girls.

Next higher than the continuation school is the trade school, *Mittlere Fachschule*, established to train workmasters of large factories and independent managers of smaller concerns and also those foremen of the larger manufacturing plants and the employers and higher officials of the smaller factories who may wish to understand and to pursue the latest advances in technique independently. Completion of the six years' work in a *Gymnasium* or *Realschule* is prerequisite to entrance. The course requires the full time of the pupils for two or three years. The rapid increase in the number of these schools has awakened alarm and occasioned organized opposition on the part of technical industrial officials who fear a flooding of the market with skilled workmen and a consequent depression of wages.

For purposes of comparison of industrial education in Germany with that of the United States, a chapter is given descriptive of sixteen endowed industrial schools in this country. Here again contrasts are more numerous than

resemblances. In America private initiative, support, and control perform the functions which in Germany are exercised by the government. Within about twenty years the endowments of these schools in the United States have aggregated $16,978,000. Germany presents no parallel to this. A comparison of the two systems as to the age of pupils, the educational qualifications, and the training received is, upon the whole, favorable to Germany. That country, however, it appears, offers no such opportunities as America for personal advancement after the training has been received.

Whereas organized industrial education has existed in the United States for only about two decades, commercial education had its beginnings fifty years ago. Since that time it has been carried on almost exclusively by private enterprise. The schools have been of the widest range of goodness and badness. Upon the whole, they have commanded comparatively slight regard from either the educational or the business world. At present, however, the case is quite different with the commercial high schools, the commercial departments of general high schools, and the schools of commerce organized in colleges and universities. The reaction of these upon the commercial colleges has been salutary, but even now private enterprise largely controls. In Germany, however, commercial education is systematized and controlled by a department of the central government, and its relation to general education is analogous to that of industrial education. Prerequisites, curricula, standards of attainment, sequent avenues to employment are all defined, and it is seen that "commercial education and the commercial world stand in a much closer relation" than with us. In the United States a period of transition is now in progress. It arises from a general dissatisfaction with the organization, curricula, and final results of the schools that are supposed to educate the masses. There is a disposition to look to Germany for ideals and models. Professor Roman devotes the closing chapters of his book to tracing this transition, comparing the schools of the two countries as to organization and control, and discussing the economic value of industrial and commercial education.

NATHANIEL BUTLER

UNIVERSITY OF CHICAGO

A Beginner's Psychology. By E. B. TITCHENER. New York: Macmillan, 1915. 12mo, pp. 362. $1.00.

Professor Titchener prefaces his new book with the statement, "I have tried to write, as nearly as might be, the kind of book that I should have found useful when I was beginning my own study of psychology . . . . nearly thirty years ago." In view of such an aim one approaches this book with considerable interest and respect, for if there is anyone who should have developed decidedly expert opinion about the requirements of a textbook in psychology it should be Professor Titchener, by virtue of his brilliant contributions to the field during the past twenty years.

In outline the book follows closely the author's *Primer*, dealing in turn with "Psychology: What It Is and What It Does"; "Sensation"; "Simple Image and Feeling"; "Attention"; "Perception and Idea"; "Association, Memory, and Imagination"; "Instinct and Emotion"; "Action"; "Thought"; "Sentiment"; "Self and Consciousness"; "Dreaming and Hypnosis." A change of emphasis is noticeable, however, in that the author does not now stress facts so much as point of view. To this end factual material is condensed and the topics are expanded which treat of the scientific point of view, differences between common-sense and science, meaning as it relates (or does not relate) to psychology.

The treatment of the last-mentioned topic seems to manifest more clearly than is usually the case the inadequacy of the purely structuralistic description of mental processes. Such a treatment does not permit of formulations in other than content terms. Hence, one is driven to assert that significations have no place in psychology. "The whole notion of meaning is foreign to science. . . . . Mental processes do not intrinsically mean . . . . meaning is not a constituent part of their nature." In spite of these self-imposed limitations, however, the author feels obliged to discuss meaning, as part of his task, and, in so doing, encounters the inevitable embarrassment. This is keenly felt in connection with the chapter on the self.

One might question whether or not the book really lives up to its name. As a beginner's book it should require little supplementation; yet it is quite certain that need of it would be felt, for unfortunately most students who begin psychology in American colleges and normal schools do not have the background, either historical or philosophical, that Professor Titchener had when he began to psychologize. It need hardly be said that no systematic treatment of the nervous system is included.

Teachers of psychology will be pleased with the questions and exercises at the end of each chapter such as those that made the *Primer* so useful. There is one difference. The earlier ones required the student to *do* more, while these ask the student to *think* more. This is in harmony with the intention of the author to emphasize point of view rather than acquisition of facts. The questions and exercises are very comprehensive, in some cases occupying several pages. One is pleased to note the avoidance of traditional and stereotyped exercises. Examples are: "Give instances from your own experience of the three levels of attention." "Criticize Sir William Hamilton's experiment. Do not be satisfied till you have found several reasons for distrusting its result." "Can you suggest methods for the determination of imaginal type?" "What sort of service could the doctrine of association render to psychology?" "Suppose you were required to write a defense of cramming. Could you find materials in these two chapters?" Such questions serve the double purpose of directing the student to the salient points in the text and of stimulating him to independent psychologizing, while from the standpoint of originality and profundity they constitute a noteworthy contribution to the teaching of psychology.

To those already familiar with the writings of this author it is unnecessary to remark upon the excellence of his expository style. The structuralistic mode of treatment lends itself well to clarity of expression, and Professor Titchener has developed a method of presenting dry and abstruse facts that is a model of lucidity. The textbook writer will admire the masterly technique displayed in guiding the uncertain steps of the beginner through the maze of intricacies and ambiguities that usually constitutes the study of psychology, and the lay reader will be so charmed with the pleasantly intimate style of the work that he will be stimulated to further psychological researches, the sources for which are suggested in a choice bibliography at the end of every chapter.

H. D. KITSON

UNIVERSITY OF CHICAGO

The Making of Modern Europe. (Vol. II, The First Renaissance, 1000–1190 A.D.) By C. R. L. FLETCHER. New York: E. P. Dutton & Co., 1915. Pp. viii+435. $2.50.

That the centuries which Mr. Fletcher has chosen to treat in this volume were a period of the wildest confusion in Europe, no one will deny. The darker ages which preceded are simplified, historically speaking, by the very paucity of dependable sources, but for the high Middle Ages there are chroniclers in increasing numbers, and the beginnings of state archives. For an author to thread the mazes of this labyrinth of conflicting authorities and obscure or confusing movements, and yet keep the thread of his narrative and interpretation clear, is indeed a task.

The author, who is writing a text rather than a treatise, has attacked the problem by taking the eleventh and twelfth centuries to be a historical unit, which he calls the First Renaissance. He sees as the main characteristic of this period, granting always the vast importance of the struggle between pope and emperor, the development of an increasingly intense nationalism. The string upon which he threads his valuation and interpretation is the conception of the Western nations as daughters of the Roman Empire.

Not being a work of research, and not pretending to add to facts already known, the book need be criticized from but one angle, its aim being to make clear to the average student or reader what we know of two centuries of very complicated history. As one volume in a series, it takes a purely horizontal cut of history; but in this narrowed period it falls back on the inevitable vertical. Four chapters in succession, out of a total of eight, are devoted to the German Empire, carrying the history of the great imperial-papal struggle to the death of Barbarossa. It is of course impossible to treat the history of the thirteenth century without giving large space to this great German imperial aspiration, which lives again in modern Germany, and did so much to shape and to warp the development of the German people. Nevertheless, one cannot help feeling that the growth of the real Germany that lay behind the

dwindling powers and exalted claims of the emperor is of far greater importance. The colonizing activity of Albrecht the Bear of Brandenburg, and of Henry the Lion of Saxony, which drove the Slavs to the eastward, and opened a new world to the German people, was far more significant than the exploits of Barbarossa, or the fascinatingly interesting life of Frederick II. As to whether or not the author exaggerates the influence of nationalism on the mediaeval empire, it would be hard to say. Certainly German nationalism was never allowed to crystalize about one center.

The France of these two centuries is given but one chapter, but a long one, and a very good one. The outline of the development of France is of course much simpler than that of Germany, and involves fewer debatable main points. Remembering always the infinite complication of detail, it is easy to grasp and outline a history which groups itself about the expansion and consolidation of the central and royal power at the expense of the local feudality.

A summary treatment of Spain and the crusades is to be expected, for Spain was quite separated from the rest of Europe in its historical development, and the details of the crusades can hardly be given much space in a one-volume text.

Mr. Fletcher has written a good text for the mediaeval period. His English is rather slangy, at times, and he sacrifices the institutional and economico-social development to the interests of narrative history, but his book is clearly written, and easy to follow.

NORMAN PARKER

UNIVERSITY OF CHICAGO

Principles of Agronomy. By HARRIS and STEWART. (Rural Textbook Series, edited by L. H. BAILEY.) New York: Macmillan, 1915. Pp. 16+451.

Many textbooks on agriculture for the high schools have been written, and few achieved. A volume which will reveal all the wonderful romance of agriculture to boys and girls between the ages of fourteen and eighteen, many of whom have no closer acquaintance with farming than what they see from the roadside, and many even to whom the great outdoors is a total mystery, must be unusual in presentment.

Principles of Agronomy, one would suppose, if its title were accurate, would treat of plant life as applied to practical farm crops. The volume does this very fully and very accurately; in fact, it does much more. It treats of the basic facts of plant growth, of soil, and of climate, although we would quarrel with the writers that a knowledge of botany and chemistry is not necessary to understand the book. We really feel that it is almost too technical for high-school use, or else we are no judge of the character of the average high school. *Principles of Agronomy* is a textbook; by their formal and consciously didactic presentation, this fact is emphasized by the authors. Enough information is contained in the volume to make whoever masters it wonderfully

well-informed of the basic facts of agriculture, but it is likely to leave him cold. Perhaps I will express just what I mean if I say that the book is too academic.

However, until the perfect textbook is written, Harris and Stewart may justly claim to have made a significant contribution to the "Rural Textbook Series." In the hands of a teacher who knows agriculture and how to teach it, this volume may easily be made the basis for important work in the classroom. Not as a book to be memorized, or conned for an array of facts with no coordination, but as a framework upon which the class may build, *Principles of Agronomy* has its place. As its authors suggest, its use should be preceded by a more elementary course, and it should be followed by work in animal husbandry. For the school giving only one course in agriculture, a more elementary text would seem to be desirable.

W. A. FREEHOFF

WAUKESHA, WIS.

School Hygiene. By ROBERT A. LYSTER, M.D. 2d ed. Baltimore: Warwick & York, 1915. Pp. viii+388. $1.15.

The notable physical features of this admirable book are its convenient size and practical illustrations. The chapters on lighting and heating, ventilation, and sanitary appliances are unusually clear and adequate. Teachers will find that they discuss these important subjects in a very instructive manner. This is also true of the chapters on school fittings. Methods of examination of the school child are discussed in detail, so that after reading this chapter it will be easy to make an accurate study of the physical characteristics of the pupil. Personal hygiene is carefully presented, and there is some space devoted to mental development, the common ailments of children, accidents, and epidemic diseases. The latter is not handled wholly from the modern viewpoint. In other respects the book is desirable.

JOSEPHINE YOUNG

UNIVERSITY OF CHICAGO

Technique of Play Writing. By CHARLTON ANDREWS. (The Writer's Library.) Springfield: Home Correspondence School, 1915. Pp. xxix+269. $1.62.

The present text belongs to the great class of books intended to instruct the novice in some one form of literary composition. As such, it has all the negative virtues of its class. It cannot be said that any student who follows out the doctrines of Mr. Andrews' text will go violently wrong. It is more important for probable purchasers to know the equally certain fact that they are unlikely to be violently right. Just as college classes in short-story writing seldom or never produce good short stories, so it is highly improbable that a student of this text will ever write the great American drama. Dramatists have an unfortunate habit of being born, though it is also essential that they

be made. The supposition in books of this class is always that if you write by rule you are writing well.

The best part of Mr. Andrews' work is his running criticism on familiar plays. One unfamiliar with the tricks of the stage may very well, after reading the author's comment, witness the performance of "The Witching Hour," the next time he attends it, with new eyes. This part of the text is properly the function of criticism. It is when he gets beyond criticism and attempts to lay down general laws for the fledgling dramatist that the author becomes at once amusing and disappointing. Yet it is exactly here that the novice expects most help. He does not need to be told that the end of the first act of *Lady Windemere's Fan* is a remarkable piece of stage mechanics; very probably he knows it already. What he is looking for is a general recipe for working up suspense. The kind of recipe that he will get from Mr. Andrews may be surmised from the following sample, which pertains to "The Management of Preparation in Plot"—whatever that is:

1. Cite as many instances as you can of "preparation" in plays.
2. Cite one or two from novels.
3. How do the forms differ in the two literary types, if at all?
4. Invent two complete "triangle of information" [Shades of Euclid!] situations, giving one in rough outline. . . . .
5. Devise the necessary "preparation" for lending effectiveness to any tentative play climaxes you may have in mind.

You can obtain the *Art of Writing Love Letters*, neatly bound, for fifteen cents. The *Technique of Play Writing* will cost you a dollar and a half. Yet love letters written by rule are not noted for their excellence; and it is equally unlikely that plays written according to this formula would be much more valuable.

HOWARD MUMFORD JONES

UNIVERSITY OF CHICAGO

A Practical Elementary Chemistry. By B. W. MCFARLAND. New York: Scribner, 1915. Pp. xvi+462.

This book differs from the current texts in high-school chemistry not in subject-matter, but in its arrangement and method of presentation. The student's laboratory work, according to the author's plan, is made the basis of the theoretical structure of the high-school chemistry. His book may be characterized as a laboratory guide with a chemical lexicon attached to it, which the student is required to consult continually in pursuing references given at the end of each laboratory exercise. The references are not always happily chosen. A student performing his first chemical experiment will derive positive harm, from an educational point of view, in reading in the lexical part of the book that "an acid is a substance that gives hydrogen ions in solution. It is generally sour to the taste and turns blue litmus paper red. It consists of the hydrogen radical joined to any acid radical except O and OH.

It reacts with a base or basic oxide to form water and a salt." This language means nothing to him.

Such unhappily chosen references are too frequent. The language of this book is the true chemical jargon. The quantity of English has been reduced to a minimum. The book attempts to teach the student the chemical language and the handling of chemical equations during the first seven weeks of his course in chemistry. Why not teach him algebra or Bengalese instead of chemistry? Chemical formulae and equations are important only as expressions of chemical phenomena. In tone the book is dogmatic, and its study is a grind from beginning to end. The student will get from it chemical facts, expressions, and theories in abundance, but not the spirit of modern science.

A. H. BERNHARD

LA CROSSE STATE NORMAL SCHOOL

What Is Education? By ERNEST CARROLL MOORE. Boston: Ginn & Co., 1915. Pp. vii+357. $1.25.

Professor Moore states in his preface that Plato and Socrates have played the chief rôles in determining his educational philosophy. He says further that he is very largely indebted to Professor John Dewey and Professor Frank M. McMurry, both of Columbia University. With this start, one is a little curious to see how Professor Moore will harmonize principles derived from Plato and Socrates with the teachings of Professor Dewey and Professor McMurry. One's curiosity is all the keener when he recalls that Professor Moore's chief educational experience has been gained in the administration of a complex educational system. It is exceedingly rare to hear a practical school man, at least a school superintendent, even refer to Plato or Socrates; the reviewer cannot recall that he has ever before heard a superintendent say that his thoughts on education have been derived mainly from the ancient theorists.

The author of *What Is Education?* was formerly a superintendent of schools. It should be mentioned further that he is now professor of education at Harvard. His discussion of education appears to be influenced more by his present than by his former position. He has time to consider such questions as, What is the meaning of education? Are there different kinds of education? What is the meaning of knowledge? Is the principle of general discipline sound? What does learning mean? Is there a place for method in education? and so on. In the discussion of these questions the author does not attempt to present any facts or conclusions which are not familiar to all students of education in America. His book is written, not for the purpose of adding to our knowledge of education, but for the purpose of introducing college students and teachers to established knowledge regarding the ideals, aims, and methods of modern education. Some who read this book may feel that, since the facts and principles are all understood, there is no need of it; but this would be an

erroneous conclusion. Each new generation of students and teachers must be introduced anew to the principles of education indorsed by the leaders in this field. Their attention must be called to matters which will seem commonplace and platitudinous to the individual who has been over the ground time and again. The experienced person often forgets that the novice who aspires to become a teacher must begin *de novo* to consider questions of aims, methods, and values. This being the case, it is well that he should become acquainted with the views of Plato and Socrates, as well as with those of moderns like Professor Dewey and Professor McMurry—all interpreted and illustrated by one of Professor Moore's training and experience.

Professor Moore's stand on controverted questions is in harmony with that taken by progressive students of education. He has no faith in the doctrine of formal discipline; he believes that knowledge is of value just to the extent that it can be utilized in solving the problems of everyday life; he condemns teaching which consists in having pupils learn *memoriter* the contents of books; he thinks that one can learn only by doing, and that the purpose of learning is doing; he commends the view that the teacher ought to set problems before his pupils, since their minds will operate effectively only when they have problems to solve; he does not think highly of the prevalent system of examinations; he commends the modern ideal of scientific or exact measurement, but he cautions investigators and teachers not to place too much confidence in the scientific character of scales and standards and "diagnostic" apparatus.

There is no difference of opinion in regard to these matters among students of education, though there are still some doubters among those who are groping in the darkness. It is well to have these conclusions presented in the way in which Professor Moore presents them. There is a dignity, a reserve, and a scholarly flavor connected with his presentation. His calling upon the ancients —as well as the moderns—to bear witness to the soundness of his views will give assurance to the novice, who, when he works through this book, will feel that there is a definite body of educational doctrine which is well established, which he can accept and organize his practice upon. This is without doubt the chief contribution which Professor Moore's book will make to education in this country.

M. V. O'SHEA

UNIVERSITY OF WISCONSIN

BOOK-NOTES

The Junior High School. (Bulletin of the High School Teachers Association of New York City.) New York: Keslin Press, 1916. Pp. 28. Paper.

SHEPARD, ODELL. *Shakespeare Questions: An Outline for the Study of the Leading Plays.* Boston: Houghton Mifflin Co., 1916. Pp. 214. $0.50.

Questions on eighteen of the plays, requiring a close analytical study of the text. The author's test has been: Would Shakespeare himself be interested in this question? The questions should lead high-school classes to a close and interested scrutiny of the text, since the author has realized the keen interest of such students in debatable propositions.

BERKOWITZ, J. H. *Sanitary School Surveys as a Health-protective Measure.* New York Association for Improving the Condition of the Poor, 1916. Pp. 9. Paper.

HEBBLE, CHARLES R., and GOODWIN, FRANK P. *The Citizen's Book.* Cincinnati: Stewart & Kidd Co., 1916. Pp. 242. $1.25.

For Cincinnati citizens, but excellent material for any urban high-school class in civics, as laboratory material to be applied to his own city.

SMART, WALTER K. *How to Write Business Letters.* Chicago: A. W. Shaw Co., 1916. Pp. 160. $0.70.

Written in conjunction with the editors of *System.* Based on the examination of nearly 2,000 actual business letters, many of which are reproduced. The chapters are concerned with: the tone of a business letter; its make-up; inquiry, contract, and routine letters; complaints; collection; sales letters; getting attention and interest; description of the product; proof of claims; persuading to buy; inducements to offer; clinching the sale; follow-up letters; news value; personality; the "you" interest.

Register of Officers and Alumni. (Bulletin of Purdue University.) LaFayette: Purdue University, 1916. Pp. 167. Paper.

BARROWS, ANNA. *Extension Course in Vegetable Foods.* (United States Department of Agriculture, Bulletin No. 123.) Washington: Government Printing Office. 1916. Pp. 78. Paper. $0.10.

PEATTIE, DONALD C. *Blown Leaves.* Chicago: School of Education Print Shop, 1916. Pp. 26. Paper.

Poems by a member of the fourth-year class of the University High School, and printed by him in the manual-training department. Remarkable work, as this extract will show:

"As you went down the garden walk,
The wind upon your face
And the blue cornflowers in your hair,
I saw how tender was the sky
And how the wind, with its caress so gentle,
Blew the dark curls across your half-smiling lips,
Like the fine foliage about the slender birches,
As you went down the garden walk."

Lane Tech Evening School Year Book. Chicago: Lane Technical High School Press, 1916. Pp. 150. Paper.

Sets forth the varied activities of this most interesting of Chicago schools.

RICH, DANIEL HOMER (ed.). *The Tragedy of Julius Caesar.* New York: Harper, 1916. Pp. xli+133.

Apparently another of the innumerable series of school Shakespeare texts is starting. The Harper series purports to present material that will picture the acting conditions of Shakespeare's time. This is therefore the "Globe Theater Shakespeare." Aside from the introduction on the Elizabethan playhouse, the editorial material is all stock material.

RICH, DANIEL HOMER (ed.). *The Merchant of Venice.* New York: Harper, 1916. Pp. xxxvii+132.

See above.

National Education Association. *Addresses and Proceedings, Oakland, Cal., 1915.* Ann Arbor: Published by the Association, 1916. Pp. xii+1193.

IDE, EMILY KATHERINE. *The History and Significance of the American Flag.* Boston: E. K. Ide, 1916. Pp. 83. $0.70.

GOWIN, ENOCH BURTON, and WHEATLEY, WILLIAM ALONZO. *Occupations: A Textbook in Vocational Guidance.* Boston: Ginn & Co., 1916. Pp. xii+357. $1.20.

An excellent text. The authors wisely discuss groups and classes of occupations, rather than detailed trades, and discuss them in a thorough and scholarly manner.

SCHLICHER, JOHN J. *Latin Plays for Student Performances and Reading.* Boston: Ginn & Co., 1916. Pp. vii+213. $0.75.

Written for high-school students. The plays themselves are not very exciting, but will doubtless furnish a good deal of amusement for the Latin class.

KILPATRICK, WILLIAM HEARD. *Froebel's Kindergarten Principles Critically Examined.* New York: Macmillan, 1916. Pp. xii+217.

An attempt to clarify disputed points in the doctrines of Froebel and "to ascertain what value attaches to these in the light of the best current theory."

Annual Report of the New Orleans Public Schools of the Parish of Orleans, 1914–1915. New Orleans: J. FitzWilliam & Co., 1916. Pp. 429. Paper.

WRIGHTSON, HILDA A. *Games and Exercises for Mental Defectives.* Cambridge: Caustic-Claflin Co., 1916. Pp. 100.

A convenient manual with no thesis to uphold.

GLADDEN, WASHINGTON. *Commencement Days.* New York: Macmillan, 1916. Pp. 257. $1.25.

Eleven addresses and baccalaureate sermons.

FLEXNER, ABRAHAM. *A Modern School.* (Publications of the General Education Board.) New York, 1916. Pp. 23. Paper.

Lectures Delivered at the Merchants' Week Held at the University of Kansas. (Bulletin of the University of Kansas.) Lawrence: Kansas State Printing Plant, 1915. Pp. 83. Paper.

SHAW, FRANK L. *The Building Trades.* Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 107.

FLEMING, RALPH D. *Railroad and Street Transportation.* Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 76.

These two sections of the survey present accurate data on trades which draw the student out of school at a very early period. Mr. Shaw concludes that the junior high school must offer a general industrial course for boys who expect to enter the building trades. Mr. Fleming concludes that, in regard to transportation, the schools can give courses in automobile construction and operation, and in little else, since other processes can best be learned on the job.

The Newton Public Schools. (Annual Report of the School Department, Newton, Mass., Vol. 76, 1915.) Pp. 85. Paper.

MCELROY, CHARLES F. (ed.). *The Literacy Test for Immigrants.* Chicago: Published by the University of Chicago Chapter of Delta Sigma Rho. Pp. 70. $1.00.

This pamphlet of seventy pages contains a complete college debate upon the literacy test, as presented by the University of Chicago representatives in recent intercollegiate contests. The printed speeches are supplemented by an elaborate brief and by a useful bibliography. If used with discrimination, the material may be very helpful for college and high-school debaters. An obvious danger is that the speeches may be copied almost verbatim, and presented in parrot-like imitation.

Detailed discussions of the following books will appear later:

SELLARS, ROY WOOD. *Critical Realism: A Study of the Nature and Conditions of Knowledge.* Chicago: Rand McNally & Co., 1916. Pp. x+283 $2.00.

WALTERS, FRANCIS M. *The Principles of Health Control.* Boston: D. C. Heath & Co., 1916. Pp. viii+476.

GRONOW, ANNA T. *Geschichte und Sage.* Boston: Ginn & Co., 1916. Pp. viii +330. $0.90.

PRICE, W. R. (ed.). *Gerstäcker's Irrfahrten.* New York: Scribner, 1916. Pp. xii+245. $0.50.

MOSHER, JOSEPH A. *The Essentials of Effective Gesture.* New York: Macmillan, 1916. Pp. xii+188. $1.00.

KIRKPATRICK, EDWIN A. *Fundamentals of Sociology.* Boston: Houghton Mifflin Co., 1916. Pp. x+291. $1.25.

MANLY, JOHN MATTHEWS (ed.). *English Prose and Poetry (1137–1892).* Boston: Ginn & Co., 1916. Pp. xl+792. $2.00.

MATTHEWS, BRANDER (ed.). *Chief European Dramatists.* Boston: Houghton Mifflin Co., 1916. Pp. xi+786. $2.75.

WINCHESTER, C. T. *Wordsworth: How to Know Him.* Indianapolis: Bobbs-Merrill Co., 1916. Pp. 296. $1.25.